APPENDIX
VOLUME 3
TRANSPORTATION IMPACT STUDY APPENDICES

SCH# 2016091024
CITADEL OUTLETS EXPANSION PROJECT
COMMERCE, CALIFORNIA

LEAD AGENCY:

CITY OF COMMERCE
PUBLIC WORKS AND DEVELOPMENT SERVICES DEPARTMENT
PLANNING DIVISION
2535 COMMERCE WAY
COMMERCE, CALIFORNIA 90040

REPORT PREPARED BY:

GIBSON TRANSPORTATION CONSULTING, INC.
555 WEST 5TH STREET, SUITE 3375
LOS ANGELES, CALIFORNIA 90013

JUNE 20, 2019

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Appendix A

Traffic Counts

Turning Movement Count Report AM

Location ID: 1
North/South: Atlantic Blvd
East/West: Whittier Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	26	113	30	21	194	25	8	106	9	19	53	14	618
7:15	14	137	31	27	251	24	7	137	15	9	73	16	741
7:30	36	162	33	26	226	31	13	175	16	23	105	25	871
7:45	27	170	39	24	210	48	16	133	12	20	129	29	857
8:00	30	179	52	26	177	30	22	109	20	23	146	14	828
8:15	24	124	39	33	184	41	11	108	14	16	118	8	720
8:30	22	147	32	32	147	28	13	123	27	12	86	9	678
8:45	24	138	45	28	153	20	21	93	14	15	99	12	662
Total Volume:	203	1170	301	217	1542	247	111	984	127	137	809	127	5975
Approach %	12%	70%	18%	11%	77%	12%	9%	81%	10%	13%	75%	12%	
Peak Hr Begin:	7:15												
PHV	107	648	155	103	864	133	58	554	63	75	453	84	3297
PHF	0.872			0.911			0.827			0.836			0.946

Turning Movement Count Report PM

Location ID: 1
North/South: Atlantic Blvd
East/West: Whittier Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	21	172	65	45	158	37	25	146	20	30	177	23	919
16:15	24	171	53	48	133	42	27	185	25	31	201	11	951
16:30	14	88	19	47	149	51	24	177	23	31	239	20	882
16:45	11	85	13	37	132	55	21	171	24	30	233	24	836
17:00	24	178	46	45	188	35	27	234	25	32	234	27	1095
17:15	27	187	41	41	158	40	25	225	18	21	225	30	1038
17:30	21	188	52	49	152	38	26	197	25	22	233	19	1022
17:45	22	190	42	42	138	30	20	161	24	21	243	29	962
Total Volume:	164	1259	331	354	1208	328	195	1496	184	218	1785	183	7705
Approach %	9%	72%	19%	19%	64%	17%	10%	80%	10%	10%	82%	8%	
Peak Hr Begin:	17:00												
PHV	94	743	181	177	636	143	98	817	92	96	935	105	4117
PHF	0.975			0.892			0.880			0.969			0.940

Pedestrian/Bicycle Count Report

Location ID: 1
North/South: Atlantic Blvd
East/West: Whittier Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	31	2	25	0	17	2	13	0
7:15	20	5	32	0	18	4	7	0
7:30	22	0	22	3	22	1	13	0
7:45	31	2	52	0	21	1	4	3
8:00	22	0	26	3	12	1	7	2
8:15	14	2	36	0	22	2	10	0
8:30	24	5	23	0	23	1	5	0
8:45	24	2	19	3	15	1	16	1

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	22	3	24	1	33	3	19	1
16:15	27	3	27	3	22	5	16	1
16:30	29	2	44	3	56	3	15	1
16:45	30	5	26	4	45	2	27	1
17:00	31	1	32	4	39	2	23	5
17:15	45	1	41	4	48	5	18	2
17:30	34	2	44	0	42	3	12	2
17:45	42	2	36	2	34	2	15	3

Turning Movement Count Report AM

Location ID: 2
North/South: Atlantic Blvd
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	12	136	18	15	231	30	5	98	13	8	67	12	645
7:15	19	138	18	26	243	39	1	126	16	19	90	14	749
7:30	27	14	16	25	227	34	7	149	11	18	124	26	678
7:45	45	209	20	29	201	41	11	122	12	14	126	19	849
8:00	33	155	28	13	206	34	8	115	13	22	108	29	764
8:15	39	118	18	22	201	23	11	111	14	19	132	17	725
8:30	22	142	23	11	209	18	6	119	12	25	117	23	727
8:45	24	125	19	14	176	25	7	94	18	18	93	22	635
Total Volume:	221	1037	160	155	1694	244	56	934	109	143	857	162	5772
Approach %	16%	73%	11%	7%	81%	12%	5%	85%	10%	12%	74%	14%	
Peak Hr Begin:	7:45												
PHV	139	624	89	75	817	116	36	467	51	80	483	88	3065
PHF	0.777			0.930			0.955			0.969			0.903

Turning Movement Count Report PM

Location ID: 2
North/South: Atlantic Blvd
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	28	183	15	22	144	24	7	166	16	28	258	28	919
16:15	25	190	18	24	157	18	13	172	19	30	302	28	996
16:30	30	152	23	27	146	26	11	160	31	20	301	26	953
16:45	24	138	16	27	184	25	14	200	25	26	324	33	1036
17:00	29	191	25	25	158	23	10	207	19	29	314	37	1067
17:15	31	155	28	23	166	15	6	192	11	40	306	32	1005
17:30	33	182	30	22	139	18	11	183	21	22	329	31	1021
17:45	36	178	21	23	156	15	9	152	18	28	319	27	982
Total Volume:	236	1369	176	193	1250	164	81	1432	160	223	2453	242	7979
Approach %	13%	77%	10%	12%	78%	10%	5%	86%	10%	8%	84%	8%	
Peak Hr Begin:	16:45												
PHV	117	666	99	97	647	81	41	782	76	117	1273	133	4129
PHF	0.900			0.874			0.940			0.994			0.967

Pedestrian/Bicycle Count Report

Location ID: 2
North/South: Atlantic Blvd
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	8	4	10	1	2	0	5	0
7:15	7	1	8	1	6	0	6	1
7:30	7	1	7	0	6	0	2	2
7:45	5	0	12	2	6	1	2	0
8:00	9	0	13	2	11	0	4	1
8:15	10	0	13	1	10	1	5	0
8:30	5	0	11	0	10	1	6	0
8:45	4	0	8	0	9	0	1	1

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	15	2	9	1	12	0	5	0
16:15	12	0	18	2	7	0	4	3
16:30	13	1	11	0	9	0	11	0
16:45	12	2	13	2	4	0	9	3
17:00	8	3	8	3	7	1	5	0
17:15	12	2	19	2	12	3	10	2
17:30	11	2	15	5	6	2	8	3
17:45	7	3	6	2	4	3	5	5

Turning Movement Count Report AM

Location ID: 3
North/South: Garfield Avenue
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	17	213	10	27	180	34	8	124	24	24	48	17	726
7:15	12	197	17	38	223	47	5	160	22	25	93	17	856
7:30	16	286	12	27	174	28	11	187	21	38	86	19	905
7:45	15	295	19	34	250	35	7	171	17	44	124	24	1035
8:00	18	319	23	20	154	58	12	196	27	24	99	18	968
8:15	21	287	11	28	189	33	5	137	24	31	85	21	872
8:30	18	252	12	18	150	28	8	158	25	20	90	16	795
8:45	14	221	14	26	149	27	10	124	30	34	71	26	746
Total Volume:	131	2070	118	218	1469	290	66	1257	190	240	696	158	6903
Approach %	6%	89%	5%	11%	74%	15%	4%	83%	13%	22%	64%	14%	
Peak Hr Begin:	7:30												
PHV	70	1187	65	109	767	154	35	691	89	137	394	82	3780
PHF	0.918			0.807			0.867			0.798			0.913

Turning Movement Count Report PM

Location ID: 3
North/South: Garfield Avenue
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	10	239	10	16	90	18	15	252	26	52	218	39	985
16:15	3	273	19	18	112	14	20	224	27	43	264	37	1054
16:30	9	266	12	21	88	19	12	248	28	61	257	46	1067
16:45	7	235	16	16	116	9	20	231	19	32	167	41	909
17:00	7	279	12	22	100	15	19	276	18	46	276	37	1107
17:15	10	289	15	14	138	16	15	317	20	54	288	42	1218
17:30	5	279	18	17	98	20	23	269	21	36	250	41	1077
17:45	7	284	16	16	121	15	20	284	18	72	281	43	1177
Total Volume:	58	2144	118	140	863	126	144	2101	177	396	2001	326	8594
Approach %	3%	92%	5%	12%	76%	11%	6%	87%	7%	15%	73%	12%	
Peak Hr Begin:	17:00												
PHV	29	1131	61	69	457	66	77	1146	77	208	1095	163	4579
PHF	0.972			0.881			0.923			0.926			0.940

Pedestrian/Bicycle Count Report

Location ID: 3
North/South: Garfield Avenue
East/West: Olympic Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	1	0	8	1	5	0
7:15	4	1	2	0	5	2	9	1
7:30	7	0	3	1	6	2	8	4
7:45	12	2	6	0	5	0	10	2
8:00	6	0	4	0	3	2	7	0
8:15	13	1	5	1	4	1	9	0
8:30	7	0	6	0	2	0	1	0
8:45	2	0	2	0	2	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	0	4	0	5	0	6	0
16:15	0	0	5	0	13	1	5	0
16:30	1	0	8	1	10	2	11	3
16:45	0	0	9	0	1	0	4	1
17:00	5	1	5	3	2	1	10	4
17:15	4	0	9	1	14	3	12	0
17:30	4	0	4	0	3	3	8	1
17:45	2	0	3	0	6	0	8	0

Turning Movement Count Report Mid-Day

Location ID: 4
North/South: ATLANTIC BOULEVARD/TRIGGS STREET/GOODRICH
East/West: TELEGRAPH ROAD/FERGUSON DRIVE

Date: 05/19/16
City: Commerce, CA

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
7:00	4	14	179	1	0	0	3	0	2	58	5	79	71	45	110	84	4	20	21	45	18	3	1	764
7:15	9	22	213	2	0	0	5	2	2	65	8	74	84	42	135	68	17	25	22	55	24	4	5	883
7:30	11	15	194	2	0	0	4	2	5	70	6	72	65	67	146	106	14	21	27	67	17	5	8	920
7:45	9	25	223	4	0	0	5	1	3	68	10	77	79	73	110	81	8	28	23	101	35	15	5	978
8:00	16	14	196	2	0	0	3	0	3	65	13	72	82	82	120	72	10	27	15	67	17	6	4	886
8:15	9	12	175	3	0	0	2	2	5	74	9	70	80	67	111	77	16	27	16	74	19	5	3	854
8:30	9	13	152	4	1	0	7	3	2	46	4	55	57	85	141	64	8	20	19	49	7	8	0	754
8:45	11	14	144	4	1	0	6	1	4	40	4	51	60	76	97	77	11	29	16	47	18	5	3	713

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
7:00-8:00	33	76	809	9	0	0	5	5	12	261	29	302	299	227	501	339	43	94	93	268	94	27	19	3545
7:15-7:15	45	76	826	10	0	0	8	5	13	268	37	295	310	264	511	327	49	101	87	290	93	30	22	3667
7:30-8:30	45	66	788	11	0	0	3	5	16	277	38	291	306	289	487	336	48	103	81	309	88	31	20	3638
7:45-8:45	43	64	746	13	1	0	10	6	13	253	36	274	298	307	482	294	42	102	73	291	78	34	12	3472
8:00-9:00	45	53	667	13	2	0	10	6	14	225	30	248	279	310	469	290	45	103	66	237	61	24	10	3207

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
4:00	4	13	251	4	1	0	8	3	8	90	5	75	76	82	170	64	13	48	21	175	26	11	2	1150
4:15	12	10	216	2	0	1	3	5	7	37	5	79	84	99	191	71	18	50	16	198	31	2	1	1138
4:30	5	5	225	5	0	0	6	4	11	68	7	87	105	92	176	75	10	49	28	195	38	5	4	1200
4:45	3	6	201	2	0	0	4	2	6	71	6	86	92	90	224	88	13	47	25	200	28	4	0	1198
5:00	2	2	264	1	0	0	7	2	6	51	8	73	89	100	204	92	9	46	20	207	37	5	1	1226
5:15	2	9	241	1	0	0	10	1	6	67	5	76	91	100	192	91	14	49	29	209	38	1	1	1233
5:30	8	7	255	0	0	0	9	0	6	46	18	54	105	98	204	80	11	58	21	197	31	3	1	1212
5:45	8	8	204	3	0	0	9	0	6	41	3	76	99	88	184	64	6	38	24	176	39	9	0	1085

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
4:00-5:00	24	34	893	13	1	1	21	14	32	266	23	327	357	363	761	298	54	194	90	768	123	22	7	4686
4:15-5:15	22	23	906	10	0	1	20	13	30	227	26	325	370	381	795	326	50	192	89	800	134	16	6	4762
4:30-5:30	12	22	931	9	0	0	27	9	29	257	26	322	377	382	796	346	46	191	102	811	141	15	6	4857
4:45-5:45	15	24	961	4	0	0	30	5	24	235	37	289	377	388	824	351	47	200	95	813	134	13	3	4869
5:00-6:00	20	26	964	5	0	0	35	3	24	205	34	279	384	386	784	327	40	191	94	789	145	18	3	4756

Turning Movement Count Report AM

Location ID: 5
North/South: Garfield Avenue
East/West: Flotilla Street

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	35	229	37	30	17	10	8	136	8	2	4	15	531
7:15	36	231	20	53	18	11	6	156	2	3	4	17	557
7:30	47	303	42	51	30	11	18	184	7	1	3	18	715
7:45	67	272	58	68	48	21	18	177	8	3	6	13	759
8:00	80	327	60	78	16	13	21	169	8	2	4	18	796
8:15	39	269	36	29	20	13	11	140	7	2	3	10	579
8:30	62	252	43	34	16	12	9	168	10	1	1	11	619
8:45	48	212	22	28	10	7	9	147	3	7	5	15	513
Total Volume:	414	2095	318	371	175	98	100	1277	53	21	30	117	5069
Approach %	15%	74%	11%	58%	27%	15%	7%	89%	4%	13%	18%	70%	
Peak Hr Begin:	7:30												
PHV	233	1171	196	226	114	58	68	670	30	8	16	59	2849
PHF	0.857			0.726			0.919			0.865			0.895

Turning Movement Count Report PM

Location ID: 5
North/South: Garfield Avenue
East/West: Flotilla Street

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	36	259	30	24	4	6	11	249	7	9	26	60	721
16:15	46	272	36	30	10	11	13	259	2	2	32	49	762
16:30	45	276	34	60	8	14	6	226	3	7	31	65	775
16:45	38	260	44	32	7	4	14	242	2	3	31	57	734
17:00	51	296	30	57	4	17	14	288	3	6	59	64	889
17:15	58	316	39	41	9	9	9	286	1	9	48	72	897
17:30	45	318	32	29	5	12	9	292	3	7	25	58	835
17:45	40	309	40	24	8	10	6	279	1	4	30	67	818
Total Volume:	359	2306	285	297	55	83	82	2121	22	47	282	492	6431
Approach %	12%	78%	10%	68%	13%	19%	4%	95%	1%	6%	34%	60%	
Peak Hr Begin:	17:00												
PHV	194	1239	141	151	26	48	38	1145	8	26	162	261	3439
PHF	0.953			0.721			0.976			0.870			0.958

Pedestrian/Bicycle Count Report

Location ID: 5
North/South: Garfield Avenue
East/West: Flotilla Street

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	0	0	4	0	2	0
7:15	2	0	0	1	0	0	7	0
7:30	0	0	0	0	5	0	1	0
7:45	1	0	0	1	4	0	2	0
8:00	1	0	0	0	2	0	4	0
8:15	0	0	0	0	4	0	1	0
8:30	0	0	3	1	3	0	1	0
8:45	1	0	0	0	1	0	2	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	3	0	0	0	0	1	0	0
16:15	2	0	0	0	2	0	0	0
16:30	2	0	4	0	10	0	3	3
16:45	0	0	1	0	6	2	1	0
17:00	6	0	2	0	2	1	1	0
17:15	2	0	1	2	0	0	1	0
17:30	1	0	1	0	0	0	1	0
17:45	7	0	0	0	1	0	2	0

Turning Movement Count Report AM

Location ID: 6
North/South: West Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	29	1	0	0	0	0	41	0	71
7:15	0	0	0	0	19	0	1	0	1	1	56	0	78
7:30	0	0	0	0	38	0	2	0	2	1	54	0	97
7:45	0	0	0	0	32	2	0	0	1	3	45	0	83
8:00	0	0	0	0	41	0	0	0	0	9	42	0	92
8:15	0	0	0	0	20	1	1	0	1	5	33	0	61
8:30	0	0	0	0	36	1	0	0	4	4	36	0	81
8:45	0	0	0	0	32	1	1	0	1	5	28	0	68
Total Volume:	0	0	0	0	247	6	5	0	10	28	335	0	631
Approach %	0%	0%	0%	0%	98%	2%	33%	0%	67%	8%	92%	0%	
Peak Hr Begin:	7:15												
PHV	0	0	0	0	130	2	3	0	4	14	197	0	350
PHF	0.000			0.805			0.438			0.925			0.902

Turning Movement Count Report PM

Location ID: 6
North/South: West Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	0	0	0	69	5	6	0	10	13	41	0	144
16:15	0	0	0	0	47	6	8	0	16	15	36	0	128
16:30	0	0	0	0	116	5	2	0	12	16	33	0	184
16:45	0	0	0	0	64	6	5	0	14	20	37	0	146
17:00	0	0	0	0	57	8	1	0	8	14	45	0	133
17:15	0	0	0	0	65	4	6	0	6	14	31	0	126
17:30	0	0	0	0	59	8	7	0	11	22	28	0	135
17:45	0	0	0	0	39	7	7	0	5	20	31	0	109
Total Volume:	0	0	0	0	516	49	42	0	82	134	282	0	1105
Approach %	0%	0%	0%	0%	91%	9%	34%	0%	66%	32%	68%	0%	
Peak Hr Begin:	16:00												
PHV	0	0	0	0	296	22	21	0	52	64	147	0	602
PHF	0.000			0.657			0.760			0.925			0.818

Pedestrian/Bicycle Count Report

Location ID: 6
North/South: West Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	1	0
7:15	0	0	0	0	0	2	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	1	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	1	0	0	0
8:45	0	0	0	0	0	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	3	0	0	0
16:15	0	0	0	0	0	0	2	0
16:30	0	0	0	0	0	0	1	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	1	0	0	0
17:30	0	0	0	0	2	0	1	0
17:45	0	0	2	0	2	1	1	0

Turning Movement Count Report AM

Location ID: 7
North/South: East Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	34	7	4	0	0	1	34	0	80
7:15	0	0	0	0	21	3	3	0	0	3	50	0	80
7:30	0	0	0	0	39	17	1	0	0	5	49	0	111
7:45	0	0	0	0	35	12	8	0	2	1	38	0	96
8:00	0	0	0	0	39	16	4	0	1	7	38	0	105
8:15	0	0	0	0	26	5	1	0	1	2	29	0	64
8:30	0	0	0	0	26	10	1	0	1	1	29	0	68
8:45	0	0	0	0	27	7	2	0	1	3	27	0	67
Total Volume:	0	0	0	0	247	77	24	0	6	23	294	0	671
Approach %	0%	0%	0%	0%	76%	24%	80%	0%	20%	7%	93%	0%	

Peak Hr Begin:	7:15												
PHV	0	0	0	0	134	48	16	0	3	16	175	0	392
PHF	0.000			0.813			0.475			0.884			0.883

Turning Movement Count Report PM

Location ID: 7
North/South: East Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	0	0	0	49	8	23	0	18	5	39	0	142
16:15	0	0	0	0	34	12	14	0	12	4	38	0	114
16:30	0	0	0	0	103	7	25	0	11	4	34	0	184
16:45	0	0	0	0	45	9	24	0	16	4	38	0	136
17:00	0	0	0	0	45	8	36	0	18	2	48	0	157
17:15	0	0	0	0	51	14	19	0	15	9	25	0	133
17:30	0	0	0	0	55	10	28	0	12	4	29	0	138
17:45	0	0	0	0	35	16	21	0	12	6	30	0	120
Total Volume:	0	0	0	0	417	84	190	0	114	38	281	0	1124
Approach %	0%	0%	0%	0%	83%	17%	63%	0%	38%	12%	88%	0%	
Peak Hr Begin:	16:30												
PHV	0	0	0	0	244	38	104	0	60	19	145	0	610
PHF	0.000			0.641			0.759			0.820			0.829

Pedestrian/Bicycle Count Report

Location ID: 7
North/South: East Citadel Driveway
East/West: Smithway St

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	3	0	0	0
7:30	0	0	0	2	0	0	0	0
7:45	0	0	0	0	1	0	0	0
8:00	0	0	0	0	2	0	0	0
8:15	0	0	0	0	1	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	1	2	0	0	0
16:15	0	0	0	0	5	0	0	0
16:30	0	0	0	0	3	0	0	0
16:45	0	0	0	1	0	0	0	0
17:00	0	0	1	1	0	0	0	1
17:15	0	0	0	0	1	0	0	1
17:30	0	0	0	0	1	0	0	1
17:45	0	0	1	1	3	0	0	1

Turning Movement Count Report AM

Location ID: 8
North/South: Tubeway Avenue
East/West: Smithway Street

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	26	27	0	0	0	0	0	22	11	14	0	8	108
7:15	19	23	0	0	0	0	0	41	8	12	0	13	116
7:30	33	16	0	0	0	0	0	37	26	24	0	13	149
7:45	42	15	0	0	0	0	0	24	18	6	0	10	115
8:00	42	25	0	0	0	0	0	36	23	17	0	11	154
8:15	25	16	0	0	0	0	0	24	8	17	0	6	96
8:30	28	19	0	0	0	0	0	28	28	15	0	2	120
8:45	20	18	0	0	0	0	0	26	14	17	0	9	104
Total Volume:	235	159	0	0	0	0	0	238	136	122	0	72	962
Approach %	60%	40%	0%	0%	0%	0%	0%	64%	36%	63%	0%	37%	
Peak Hr Begin:	7:15												
PHV	136	79	0	0	0	0	0	138	75	59	0	47	534
PHF	0.802			0.000			0.845			0.716			0.867

Turning Movement Count Report PM

Location ID: 8
North/South: Tubeway Avenue
East/West: Smithway Street

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	29	40	0	0	0	0	0	28	14	30	0	38	179
16:15	22	28	0	0	0	0	0	21	6	22	0	30	129
16:30	28	50	0	0	0	0	0	25	11	31	0	33	178
16:45	19	26	0	0	0	0	0	28	13	28	0	37	151
17:00	20	33	0	0	0	0	0	24	8	47	0	54	186
17:15	23	31	0	0	0	0	0	28	14	27	0	42	165
17:30	29	39	0	0	0	0	0	38	7	37	0	30	180
17:45	24	26	0	0	0	0	0	24	4	24	0	40	142
Total Volume:	194	273	0	0	0	0	0	216	77	246	0	304	1310
Approach %	42%	58%	0%	0%	0%	0%	0%	74%	26%	45%	0%	55%	
Peak Hr Begin:	16:45												
PHV	91	129	0	0	0	0	0	118	42	139	0	163	682
PHF	0.809			0.000			0.889			0.748			0.917

Pedestrian/Bicycle Count Report

Location ID: 8
North/South: Tubeway Avenue
East/West: Smithway Street

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	1	1
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	0	0	0	0	0	2	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	1	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 9
North/South: Washington Blvd
East/West: Saybrook Avenue

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	3	354	0	0	0	0	0	183	12	7	0	2	561
7:15	5	349	0	0	0	0	0	170	15	6	0	4	549
7:30	3	306	0	0	0	0	0	253	21	12	0	1	596
7:45	5	331	0	0	0	0	0	273	16	4	0	0	629
8:00	0	305	0	0	0	0	0	259	25	11	0	0	600
8:15	1	285	0	0	0	0	0	202	12	9	0	2	511
8:30	3	332	0	0	0	0	0	189	14	3	0	2	543
8:45	1	268	0	0	0	0	0	206	15	6	0	1	497
Total Volume:	21	2530	0	0	0	0	0	1735	130	58	0	12	4486
Approach %	1%	99%	0%	0%	0%	0%	0%	93%	7%	83%	0%	17%	
Peak Hr Begin:	7:15												
PHV	13	1291	0	0	0	0	0	955	77	33	0	5	2374
PHF	0.921			0.000			0.893			0.731			0.944

Turning Movement Count Report PM

Location ID: 9
North/South: Washington Blvd
East/West: Saybrook Avenue

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	1	267	0	0	0	0	0	261	9	21	0	4	563
16:15	1	227	0	0	0	0	0	284	5	18	0	1	536
16:30	2	262	0	0	0	0	0	301	7	26	0	3	601
16:45	1	280	0	0	0	0	0	303	9	15	0	1	609
17:00	0	327	0	0	0	0	0	320	3	35	0	2	687
17:15	2	262	0	0	0	0	0	315	2	10	0	2	593
17:30	3	277	0	0	0	0	0	317	5	9	0	1	612
17:45	1	200	0	0	0	0	0	331	1	14	0	0	547
Total Volume:	11	2102	0	0	0	0	0	2432	41	148	0	14	4748
Approach %	1%	99%	0%	0%	0%	0%	0%	98%	2%	91%	0%	9%	
Peak Hr Begin:	16:45												
PHV	6	1146	0	0	0	0	0	1255	19	69	0	6	2501
PHF	0.881			0.000			0.986			0.507			0.910

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 9
North/South: Washington Blvd
East/West: Saybrook Avenue

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	2
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	2	0	0	0
8:00	0	1	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	1	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 10
North/South: Garfield Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	55	169	39	38	256	13	1	102	11	15	102	30	831
7:15	60	161	34	30	287	14	4	103	8	5	92	34	832
7:30	62	209	44	37	268	8	4	139	9	8	144	53	985
7:45	62	183	51	47	281	17	4	120	14	9	156	61	1005
8:00	88	194	56	43	197	11	3	121	8	10	155	35	921
8:15	58	147	55	30	231	14	9	92	15	11	117	40	819
8:30	64	167	42	35	243	11	7	117	11	7	116	32	852
8:45	56	139	39	58	209	15	1	85	8	5	111	55	781
Total Volume:	505	1369	360	318	1972	103	33	879	84	70	993	340	7026
Approach %	23%	61%	16%	13%	82%	4%	3%	88%	8%	5%	71%	24%	
Peak Hr Begin:	7:15												
PHV	272	747	185	157	1033	50	15	483	39	32	547	183	3743
PHF	0.891			0.899			0.883			0.843			0.931

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 10
North/South: Garfield Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	53	140	68	38	133	12	14	163	10	11	213	59	914
16:15	53	177	78	45	139	22	22	182	11	9	238	52	1028
16:30	79	190	66	48	156	14	21	151	5	8	210	67	1015
16:45	73	184	69	33	156	11	12	183	13	10	233	48	1025
17:00	59	186	74	54	172	11	10	218	5	6	218	59	1072
17:15	77	170	80	49	182	14	22	192	4	10	277	59	1136
17:30	69	190	72	50	160	9	14	173	3	9	239	47	1035
17:45	64	204	80	44	130	11	13	189	9	4	178	51	977
Total Volume:	527	1441	587	361	1228	104	128	1451	60	67	1806	442	8202
Approach %	21%	56%	23%	21%	73%	6%	8%	89%	4%	3%	78%	19%	
Peak Hr Begin:	16:45												
PHV	278	730	295	186	670	45	58	766	25	35	967	213	4268
PHF	0.984			0.919			0.911			0.878			0.939

Pedestrian/Bicycle Count Report

Location ID: 10
North/South: Garfield Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	4	0	2	0	1	0	4	0
7:15	3	0	3	0	0	0	4	0
7:30	5	0	0	0	0	0	0	3
7:45	1	0	1	1	0	0	0	0
8:00	3	0	2	1	0	0	2	0
8:15	5	0	2	1	0	0	2	0
8:30	5	0	1	0	1	0	0	0
8:45	2	0	2	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	3	0	2	0	0	1	0	1
16:15	5	0	2	0	0	0	0	0
16:30	6	0	0	0	1	0	0	1
16:45	4	0	0	0	0	1	1	0
17:00	5	0	1	0	1	0	3	0
17:15	2	0	1	0	0	1	0	0
17:30	3	0	0	0	0	0	0	0
17:45	2	0	1	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 11
North/South: Atlantic Blvd
East/West: Telegraph Rd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	263	0	39	75	0	44	101	228	0	0	0	0	750
7:15	251	0	56	98	0	51	113	254	0	0	0	0	823
7:30	294	0	72	118	0	45	120	266	0	0	0	0	915
7:45	320	0	83	90	0	56	146	272	0	0	0	0	967
8:00	315	0	81	87	0	41	129	282	0	0	0	0	935
8:15	248	0	62	113	0	51	123	236	0	0	0	0	833
8:30	227	0	79	84	0	46	120	275	0	0	0	0	831
8:45	219	0	58	122	0	45	112	197	0	0	0	0	753
Total Volume:	2137	0	530	787	0	379	964	2010	0	0	0	0	6807
Approach %	80%	0%	20%	67%	0%	33%	32%	68%	0%	0%	0%	0%	
Peak Hr Begin:	7:30												
PHV	1177	0	298	408	0	193	518	1056	0	0	0	0	3650
PHF	0.915			0.916			0.941			0.000			0.944

Turning Movement Count Report PM

Location ID: 11
North/South: Atlantic Blvd
East/West: Telegraph Rd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	416	0	140	150	0	81	105	263	0	0	0	0	1155
16:15	390	0	138	163	0	85	142	295	0	0	0	0	1213
16:30	423	0	135	170	0	102	102	298	0	0	0	0	1230
16:45	427	0	129	184	0	109	125	317	0	0	0	0	1291
17:00	452	0	119	181	0	103	113	315	0	0	0	0	1283
17:15	471	0	131	182	0	122	108	309	0	0	0	0	1323
17:30	462	0	127	173	0	108	107	320	0	0	0	0	1297
17:45	447	0	108	146	0	92	119	307	0	0	0	0	1219
Total Volume:	3488	0	1027	1349	0	802	921	2424	0	0	0	0	10011
Approach %	77%	0%	23%	63%	0%	37%	28%	72%	0%	0%	0%	0%	
Peak Hr Begin:	16:45												
PHV	1812	0	506	720	0	442	453	1261	0	0	0	0	5194
PHF	0.963			0.956			0.969			0.000			0.981

Pedestrian/Bicycle Count Report

Location ID: 11
North/South: Atlantic Blvd
East/West: Telegraph Rd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	1	1	0	0	0	0
7:15	0	0	2	1	0	0	0	0
7:30	0	0	1	1	0	0	0	0
7:45	0	0	5	2	0	0	0	0
8:00	0	0	0	1	0	0	0	0
8:15	0	0	1	1	0	0	0	0
8:30	0	0	1	0	0	0	0	0
8:45	0	0	0	1	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	1	1	0	0	0	0
16:15	0	0	1	2	0	0	0	0
16:30	0	0	0	1	0	0	0	0
16:45	0	0	2	3	0	0	0	0
17:00	0	0	3	1	0	0	0	0
17:15	0	0	1	1	0	0	0	0
17:30	0	0	2	0	0	0	0	0
17:45	0	0	2	2	0	0	0	0

Turning Movement Count Report AM

Location ID: 12
North/South: Camfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	13	14	1	3	72	68	1	0	38	9	85	49	353
7:15	15	19	0	2	90	74	0	3	35	15	102	51	406
7:30	19	22	2	1	81	73	2	3	57	7	99	74	440
7:45	17	12	1	2	87	48	2	3	52	13	134	72	443
8:00	13	8	2	2	76	46	3	3	45	10	126	72	406
8:15	11	14	2	3	94	53	3	6	57	29	98	51	421
8:30	16	12	1	3	93	50	5	4	49	24	103	53	413
8:45	18	9	3	3	98	47	7	4	40	16	109	42	396

Total Volume:	122	110	12	19	691	459	23	26	373	123	856	464	3278
Approach %	50%	45%	5%	2%	59%	39%	5%	6%	88%	9%	59%	32%	

Peak Hr Begin:	7:30												
PHV	60	56	7	8	338	220	10	15	211	59	457	269	1710
PHF	0.715			0.913			0.894			0.896			0.965

Turning Movement Count Report PM

Location ID: 12
North/South: Camfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	49	33	7	0	136	83	6	4	37	15	183	33	586
16:15	61	34	4	2	139	58	6	1	51	30	218	43	647
16:30	87	73	3	1	160	74	4	2	46	16	186	27	679
16:45	58	55	4	1	168	90	7	3	62	25	171	48	692
17:00	87	58	10	3	151	68	8	4	56	28	160	35	668
17:15	61	31	9	1	175	76	5	3	56	24	175	28	644
17:30	67	26	7	1	123	68	11	1	83	14	198	32	631
17:45	54	38	8	1	106	58	13	3	62	15	192	36	586
Total Volume:	524	348	52	10	1158	575	60	21	453	167	1483	282	5133
Approach %	57%	38%	6%	1%	66%	33%	11%	4%	85%	9%	77%	15%	
Peak Hr Begin:	16:15												
PHV	293	220	21	7	618	290	25	10	215	99	735	153	2686
PHF	0.819			0.883			0.868			0.848			0.970

Pedestrian/Bicycle Count Report

Location ID: 12
North/South: Camfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	1	2	0	0	0	0	0	0
7:30	1	0	0	0	0	0	0	0
7:45	4	0	0	0	0	0	1	0
8:00	1	0	0	0	0	0	1	0
8:15	1	0	0	0	0	0	0	0
8:30	5	1	0	0	0	0	0	0
8:45	6	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	13	2	0	0	0	0	0	0
16:15	3	1	0	0	0	0	3	0
16:30	3	2	0	0	1	0	1	0
16:45	2	0	0	0	0	0	1	0
17:00	9	2	0	0	0	0	1	0
17:15	9	1	0	0	0	0	2	1
17:30	9	3	0	0	0	0	0	0
17:45	7	3	0	0	0	0	2	0

Turning Movement Count Report AM

Location ID: 13
North/South: Hoefner Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	2	0	1	4	153	0	0	0	0	0	64	9	233
7:15	0	0	0	5	161	0	0	0	0	0	98	25	289
7:30	4	0	0	9	154	0	0	0	0	0	94	21	282
7:45	3	0	1	20	139	0	0	0	0	0	110	37	310
8:00	2	0	1	9	149	0	0	0	0	0	90	24	275
8:15	4	0	1	13	153	0	0	0	0	0	93	15	279
8:30	1	0	5	6	148	0	0	0	0	0	89	24	273
8:45	5	0	0	9	130	0	0	0	0	0	96	17	257
Total Volume:	21	0	9	75	1187	0	0	0	0	0	734	172	2198
Approach %	70%	0%	30%	6%	94%	0%	0%	0%	0%	0%	81%	19%	
Peak Hr Begin:	7:15												
PHV	9	0	2	43	603	0	0	0	0	0	392	107	1156
PHF	0.688			0.973			0.000			0.849			0.932

Turning Movement Count Report PM

Location ID: 13
North/South: Hoefner Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	13	0	4	11	185	0	0	0	0	0	181	22	416
16:15	13	0	10	12	149	0	0	0	0	0	192	19	395
16:30	12	0	10	8	211	0	0	0	0	0	168	25	434
16:45	11	0	9	9	179	0	0	0	0	0	191	35	434
17:00	27	0	10	5	162	0	0	0	0	0	184	13	401
17:15	14	0	9	5	176	0	0	0	0	0	190	19	413
17:30	14	0	8	8	177	0	0	0	0	0	181	28	416
17:45	9	0	5	9	175	0	0	0	0	0	207	29	434
Total Volume:	113	0	65	67	1414	0	0	0	0	0	1494	190	3343
Approach %	63%	0%	37%	5%	95%	0%	0%	0%	0%	0%	89%	11%	
Peak Hr Begin:	16:30												
PHV	64	0	38	27	728	0	0	0	0	0	733	92	1682
PHF	0.689			0.862			0.000			0.913			0.969

Pedestrian/Bicycle Count Report

Location ID: 13
North/South: Hoefner Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	1	0	1	0	0	0	1
7:15	1	1	0	2	0	0	0	0
7:30	2	0	0	1	0	0	0	0
7:45	1	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	1	1	0	1	0	0	0	0
8:30	3	1	0	1	0	0	0	0
8:45	3	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	5	4	0	0	0	0	0	0
16:15	5	4	0	0	0	0	0	0
16:30	7	0	0	1	0	0	0	0
16:45	2	1	0	2	0	0	0	1
17:00	9	0	0	2	0	0	0	0
17:15	1	2	0	1	0	0	0	0
17:30	1	3	0	0	0	0	0	0
17:45	4	1	0	0	0	0	0	1

Turning Movement Count Report AM

Location ID: 14
North/South: Citadel Drive
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	11	0	5	4	146	0	0	0	0	0	36	33	235
7:15	10	0	7	4	152	0	0	0	0	0	57	33	263
7:30	15	0	2	9	156	0	0	0	0	0	61	36	279
7:45	10	0	4	12	148	0	0	0	0	0	69	40	283
8:00	11	0	4	16	144	0	0	0	0	0	56	30	261
8:15	13	0	8	11	160	0	0	0	0	0	57	36	285
8:30	11	0	3	14	144	0	0	0	0	0	61	27	260
8:45	15	0	3	15	118	0	0	0	0	0	64	37	252
Total Volume:	96	0	36	85	1168	0	0	0	0	0	461	272	2118
Approach %	73%	0%	27%	7%	93%	0%	0%	0%	0%	0%	63%	37%	
Peak Hr Begin:	7:30												
PHV	49	0	18	48	608	0	0	0	0	0	243	142	1108
PHF	0.798			0.959			0.000			0.883			0.972

Turning Movement Count Report PM

Location ID: 14
North/South: Citadel Drive
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	76	0	36	38	120	0	0	0	0	0	114	59	443
16:15	65	0	29	31	89	0	0	0	0	0	147	65	426
16:30	79	0	22	42	107	0	0	0	0	0	112	51	413
16:45	66	0	33	39	117	0	0	0	0	0	118	80	453
17:00	98	0	30	26	116	0	0	0	0	0	113	78	461
17:15	71	0	19	31	137	0	0	0	0	0	130	75	463
17:30	62	0	21	43	90	0	0	0	0	0	116	65	397
17:45	76	0	25	37	72	0	0	0	0	0	127	76	413
Total Volume:	593	0	215	287	848	0	0	0	0	0	977	549	3469
Approach %	73%	0%	27%	25%	75%	0%	0%	0%	0%	0%	64%	36%	
Peak Hr Begin:	16:30												
PHV	314	0	104	138	477	0	0	0	0	0	473	284	1790
PHF	0.816			0.915			0.000			0.923			0.967

Pedestrian/Bicycle Count Report

Location ID: 14
North/South: Citadel Drive
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	0	1	0	0	1	0
7:15	4	0	0	1	0	0	4	1
7:30	2	0	0	0	0	0	2	0
7:45	0	0	0	0	0	0	2	0
8:00	0	0	0	0	0	0	2	0
8:15	2	0	0	0	0	0	0	0
8:30	3	0	0	0	0	0	7	0
8:45	1	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	0	0	1	0	0	4	0
16:15	4	0	0	0	0	0	4	0
16:30	1	0	0	0	0	0	3	0
16:45	1	0	0	0	0	0	1	0
17:00	4	0	0	0	0	0	2	0
17:15	2	1	0	1	0	0	0	0
17:30	1	0	0	1	0	0	1	0
17:45	5	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 15
North/South: Gaspar Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	1	0	4	20	152	0	0	0	0	0	30	8	215
7:15	5	0	4	23	163	0	0	0	0	0	58	6	259
7:30	1	0	6	19	143	0	0	0	0	0	44	13	226
7:45	8	0	5	30	163	0	0	0	0	0	58	20	284
8:00	2	0	4	19	156	0	0	0	0	0	49	4	234
8:15	4	0	7	21	181	0	0	0	0	0	52	12	277
8:30	4	0	7	15	130	0	0	0	0	0	57	12	225
8:45	0	0	2	18	127	0	0	0	0	0	49	11	207
Total Volume:	25	0	39	165	1215	0	0	0	0	0	397	86	1927
Approach %	39%	0%	61%	12%	88%	0%	0%	0%	0%	0%	82%	18%	
Peak Hr Begin:	7:30												
PHV	15	0	22	89	643	0	0	0	0	0	203	49	1021
PHF	0.712			0.906			0.000			0.808			0.899

Turning Movement Count Report PM

Location ID: 15
North/South: Gaspar Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	20	0	41	18	124	0	0	0	0	0	139	8	350
16:15	24	0	35	18	110	0	0	0	0	0	157	6	350
16:30	18	0	56	16	135	0	0	0	0	0	133	7	365
16:45	23	0	38	10	123	0	0	0	0	0	143	6	343
17:00	31	0	41	15	138	0	0	0	0	0	139	1	365
17:15	14	0	47	11	129	0	0	0	0	0	146	2	349
17:30	16	0	42	4	122	0	0	0	0	0	132	8	324
17:45	15	0	31	15	80	0	0	0	0	0	132	9	282
Total Volume:	161	0	331	107	961	0	0	0	0	0	1121	47	2728
Approach %	33%	0%	67%	10%	90%	0%	0%	0%	0%	0%	96%	4%	

Peak Hr Begin:	16:15												
PHV	96	0	170	59	506	0	0	0	0	0	572	20	1423
PHF	0.899			0.923			0.000			0.908			0.975

Pedestrian/Bicycle Count Report

Location ID: 15
North/South: Gaspar Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	1	0	0	0	0	0	0	0
7:30	1	1	0	0	0	0	1	0
7:45	0	1	0	0	0	0	0	0
8:00	1	0	0	0	0	0	1	0
8:15	1	1	0	0	0	0	0	0
8:30	2	1	0	0	0	0	1	0
8:45	1	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	1	0	0	0	0	0	0
16:15	2	2	0	0	0	0	0	0
16:30	2	0	0	0	0	0	0	0
16:45	3	0	0	0	0	0	1	0
17:00	2	1	0	0	0	0	0	0
17:15	0	2	0	0	0	0	0	0
17:30	0	3	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 16
North/South: Tubeway Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	8	0	32	14	160	1	0	0	0	0	29	7	251
7:15	9	0	35	44	191	2	0	0	0	0	40	20	341
7:30	9	0	32	41	161	0	0	0	0	0	41	15	299
7:45	10	0	12	44	177	1	0	0	0	0	46	8	298
8:00	8	0	36	42	180	0	0	0	0	0	49	14	329
8:15	6	0	28	41	176	1	0	0	0	0	47	7	306
8:30	7	0	23	53	174	1	0	0	0	0	54	16	328
8:45	5	0	23	20	147	0	0	0	0	0	40	11	246
Total Volume:	62	0	221	299	1366	6	0	0	0	0	346	98	2398
Approach %	22%	0%	78%	18%	82%	0%	0%	0%	0%	0%	78%	22%	
Peak Hr Begin:	7:15												
PHV	36	0	115	171	709	3	0	0	0	0	176	57	1267
PHF	0.858			0.931			0.000			0.925			0.929

Turning Movement Count Report PM

Location ID: 16
North/South: Tubeway Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	22	0	61	23	124	0	0	0	0	0	180	20	430
16:15	12	0	63	15	119	0	0	0	0	0	193	13	415
16:30	26	0	80	25	108	0	0	0	0	0	173	9	421
16:45	19	0	50	25	136	0	0	0	0	0	173	17	420
17:00	18	0	90	23	116	0	0	0	0	0	164	20	431
17:15	18	0	58	28	138	0	0	0	0	0	200	28	470
17:30	18	0	72	36	109	0	0	0	0	0	172	15	422
17:45	11	0	59	18	91	0	0	0	0	0	159	19	357
Total Volume:	144	0	533	193	941	0	0	0	0	0	1414	141	3366
Approach %	21%	0%	79%	17%	83%	0%	0%	0%	0%	0%	91%	9%	
Peak Hr Begin:	16:45												
PHV	73	0	270	112	499	0	0	0	0	0	709	80	1743
PHF	0.794			0.920			0.000			0.865			0.927

Pedestrian/Bicycle Count Report

Location ID: 16
North/South: Tubeway Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	1	0	0	0	0	0	0
7:15	1	1	0	0	0	0	0	0
7:30	1	1	0	0	0	0	0	0
7:45	2	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	1	0	0	0	0	0	0
8:30	1	0	0	0	0	0	0	0
8:45	1	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	0	0	0	0	0	0	0
16:15	0	1	0	0	0	0	0	0
16:30	1	0	0	0	0	0	1	1
16:45	1	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0
17:15	1	1	0	0	0	0	0	0
17:30	1	1	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 17
North/South: Commerce Casino/I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	9	5	4	170	124	63	2	21	10	51	0	459
7:15	1	6	4	3	197	136	61	1	34	10	60	0	513
7:30	2	2	4	2	156	130	61	1	37	6	66	0	467
7:45	4	2	6	1	198	127	106	2	46	7	52	0	551
8:00	4	4	3	3	161	100	70	1	43	9	77	0	475
8:15	1	2	2	2	198	99	81	1	41	9	67	2	505
8:30	0	4	4	3	157	115	54	3	42	5	62	3	452
8:45	1	7	4	7	152	107	73	2	31	3	62	2	451
Total Volume:	13	36	32	25	1389	938	569	13	295	59	497	7	3873
Approach %	16%	44%	40%	1%	59%	40%	65%	1%	34%	10%	88%	1%	
Peak Hr Begin:	7:15												
PHV	11	14	17	9	712	493	298	5	160	32	255	0	2006
PHF	0.875			0.903			0.752			0.834			0.910

Turning Movement Count Report PM

Location ID: 17
North/South: Commerce Casino/I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	3	16	13	10	117	116	39	4	35	10	206	5	574
16:15	6	18	12	3	99	105	58	4	20	17	241	6	589
16:30	2	20	9	16	118	129	64	6	27	10	204	6	611
16:45	4	18	5	14	107	152	58	1	24	16	188	6	593
17:00	6	16	7	9	129	152	43	4	24	12	209	8	619
17:15	5	19	10	12	132	157	46	1	22	12	213	13	642
17:30	5	10	10	8	106	117	47	4	35	18	219	3	582
17:45	4	13	8	3	86	120	48	4	22	14	191	2	515
Total Volume:	35	130	74	75	894	1048	403	28	209	109	1671	49	4725
Approach %	15%	54%	31%	4%	44%	52%	63%	4%	33%	6%	91%	3%	
Peak Hr Begin:	16:30												
PHV	17	73	31	51	486	590	211	12	97	50	814	33	2465
PHF	0.890			0.936			0.825			0.942			0.960

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 17
North/South: Commerce Casino/I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	1	0	0	0	0	6	0
7:15	0	0	0	0	4	0	2	0
7:30	0	1	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	2	0	2	0
8:15	1	0	0	0	0	0	0	0
8:30	1	0	0	0	0	0	4	0
8:45	0	0	0	0	1	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	2	0	5	0
16:15	1	1	1	0	0	0	2	0
16:30	0	0	0	0	0	1	0	0
16:45	0	0	2	0	0	0	0	0
17:00	0	0	0	0	0	0	0	1
17:15	0	2	0	0	0	0	0	0
17:30	0	1	0	0	2	0	2	0
17:45	0	0	0	0	0	1	7	0

Turning Movement Count Report AM

Location ID: 18
North/South: Telegraph Road
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	53	22	35	144	178	3	5	140	44	30	180	20	854
7:15	81	25	26	143	185	4	7	130	61	30	204	23	919
7:30	46	30	33	128	154	4	13	135	69	28	223	21	884
7:45	88	25	54	124	169	2	7	132	54	44	272	43	1014
8:00	60	29	40	113	161	4	12	119	59	43	245	31	916
8:15	61	29	43	122	120	7	11	138	51	42	225	39	888
8:30	40	27	41	147	129	6	10	106	47	32	169	30	784
8:45	65	28	47	124	112	6	17	106	29	42	187	26	789
Total Volume:	494	215	319	1045	1208	36	82	1006	414	291	1705	233	7048
Approach %	48%	21%	31%	46%	53%	2%	5%	67%	28%	13%	76%	10%	
Peak Hr Begin:	7:15												
PHV	275	109	153	508	669	14	39	516	243	145	944	118	3733
PHF	0.804			0.897			0.919			0.841			0.920

Turning Movement Count Report PM

Location ID: 18
North/South: Telegraph Road
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	79	115	66	117	128	23	10	98	64	47	186	30	963
16:15	102	130	70	88	113	9	10	93	44	58	230	46	993
16:30	98	133	86	120	136	6	7	104	42	75	255	35	1097
16:45	81	92	74	114	151	11	12	115	51	48	235	34	1018
17:00	92	104	78	150	145	18	9	108	47	55	216	27	1049
17:15	91	108	71	143	147	9	10	113	52	66	266	37	1113
17:30	89	96	81	129	144	15	8	83	47	51	234	24	1001
17:45	67	120	78	82	103	4	6	88	42	53	257	33	933
Total Volume:	699	898	604	943	1067	95	72	802	389	453	1879	266	8167
Approach %	32%	41%	27%	45%	51%	5%	6%	63%	31%	17%	72%	10%	
Peak Hr Begin:	16:30												
PHV	362	437	309	527	579	44	38	440	192	244	972	133	4277
PHF	0.874			0.919			0.941			0.914			0.961

Pedestrian/Bicycle Count Report

Location ID: 18
North/South: Telegraph Road
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	3	1	6	0	1	0
7:15	0	0	0	0	4	0	0	1
7:30	1	0	3	1	3	0	1	0
7:45	0	0	3	2	3	1	0	0
8:00	0	0	1	0	4	0	1	0
8:15	0	0	1	1	1	1	1	0
8:30	0	0	1	2	1	0	0	0
8:45	1	0	1	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	7	2	2	0	0	0
16:15	0	0	1	2	0	0	0	0
16:30	1	0	3	1	0	0	0	0
16:45	0	0	2	0	1	0	0	0
17:00	0	0	1	1	3	0	1	0
17:15	0	0	2	3	2	0	1	0
17:30	2	0	1	2	2	0	1	0
17:45	0	0	1	0	1	1	0	0

Turning Movement Count Report AM

Location ID: 19
North/South: Garfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	15	240	14	56	163	128	97	201	4	24	19	3	964
7:15	16	272	15	48	143	147	82	224	3	23	24	4	1001
7:30	17	269	18	47	165	164	101	240	2	21	46	6	1096
7:45	12	318	19	64	167	155	118	267	0	21	37	7	1185
8:00	26	262	17	44	137	133	101	228	0	30	32	6	1016
8:15	14	287	20	53	132	129	103	224	5	31	37	4	1039
8:30	17	187	22	68	97	160	96	172	1	34	39	6	899
8:45	25	211	29	60	95	105	101	158	5	32	34	7	862
Total Volume:	142	2046	154	440	1099	1121	799	1714	20	216	268	43	8062
Approach %	6%	87%	7%	17%	41%	42%	32%	68%	1%	41%	51%	8%	
Peak Hr Begin:	7:30												
PHV	69	1136	74	208	601	581	423	959	7	103	152	23	4336
PHF	0.916			0.900			0.902			0.952			0.915

Turning Movement Count Report PM

Location ID: 19
North/South: Garfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	15	200	23	85	71	96	113	201	1	58	137	4	1004
16:15	16	217	30	85	75	80	100	158	1	68	165	11	1006
16:30	21	230	30	72	76	93	108	180	0	58	135	8	1011
16:45	9	264	26	81	70	64	87	220	2	47	160	11	1041
17:00	14	260	19	83	78	86	116	208	0	55	140	5	1064
17:15	16	229	27	92	66	67	86	187	1	56	173	10	1010
17:30	18	241	41	94	64	87	108	168	0	47	134	8	1010
17:45	19	210	30	93	59	59	89	210	4	63	160	8	1004
Total Volume:	128	1851	226	685	559	632	807	1532	9	452	1204	65	8150
Approach %	6%	84%	10%	37%	30%	34%	34%	65%	0%	26%	70%	4%	
Peak Hr Begin:	16:30												
PHV	60	983	102	328	290	310	397	795	3	216	608	34	4126
PHF	0.957			0.939			0.922			0.897			0.969

Pedestrian/Bicycle Count Report

Location ID: 19
North/South: Garfield Avenue
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	5	0	3	1	0	0	1	0
7:15	4	0	0	2	0	0	3	0
7:30	0	1	2	0	0	1	6	2
7:45	1	0	3	2	0	0	5	1
8:00	3	1	0	0	0	0	0	0
8:15	2	0	3	0	0	0	0	1
8:30	0	0	1	0	0	0	1	0
8:45	1	0	0	0	0	0	3	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	1	3	2	1	0	1	0
16:15	3	0	1	0	0	0	2	1
16:30	3	0	5	1	0	0	0	0
16:45	0	0	0	0	0	0	2	0
17:00	4	0	3	2	2	0	5	0
17:15	2	0	0	0	0	0	1	0
17:30	1	0	3	0	0	0	1	0
17:45	0	0	1	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 20
North/South: I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	0	186	103	2	0	126	50	80	0	547
7:15	0	0	0	0	235	113	3	0	115	43	76	0	585
7:30	0	0	0	0	237	96	2	0	142	43	113	0	633
7:45	0	0	0	0	255	160	3	0	149	34	133	0	734
8:00	0	0	0	0	199	116	2	0	149	43	116	0	625
8:15	0	0	0	0	200	118	2	0	150	38	103	0	611
8:30	0	0	0	0	154	99	4	0	163	51	112	0	583
8:45	0	0	0	0	130	107	1	0	134	36	118	0	526
Total Volume:	0	0	0	0	1596	912	19	0	1128	338	851	0	4844
Approach %	0%	0%	0%	0%	64%	36%	2%	0%	98%	28%	72%	0%	
Peak Hr Begin:	7:30												
PHV	0	0	0	0	891	490	9	0	590	158	465	0	2603
PHF	0.000			0.832			0.985			0.933			0.887

Turning Movement Count Report PM

Location ID: 20
North/South: I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	0	0	0	140	122	6	0	121	66	205	0	660
16:15	0	0	0	0	111	79	11	0	113	59	209	0	582
16:30	0	0	0	0	134	106	2	0	101	46	205	0	594
16:45	0	0	0	0	110	90	8	0	114	54	216	0	592
17:00	0	0	0	0	149	114	11	0	109	85	198	0	666
17:15	0	0	0	0	111	115	6	0	118	51	210	0	611
17:30	0	0	0	0	103	83	7	0	119	62	211	0	585
17:45	0	0	0	0	97	91	8	0	116	54	213	0	579
Total Volume:	0	0	0	0	955	800	59	0	911	477	1667	0	4869
Approach %	0%	0%	0%	0%	54%	46%	6%	0%	94%	22%	78%	0%	
Peak Hr Begin:	16:30												
PHV	0	0	0	0	504	425	27	0	442	236	829	0	2463
PHF	0.000			0.883			0.946			0.941			0.925

Pedestrian/Bicycle Count Report

Location ID: 20
North/South: I-5 Ramps
East/West: Telegraph Road

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 21
North/South: Eastern Avenue (NB) / Altlantic Blvd (SB)
East/West: Atlantic Blvd (EB)
Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	194	122	0	0	0	0	0	197	0	0	0	146	659
7:15	158	144	0	0	0	0	0	234	0	0	0	163	699
7:30	208	158	0	0	0	0	0	217	0	0	0	168	751
7:45	211	168	0	0	0	0	0	269	0	0	0	148	796
8:00	228	123	0	0	0	0	0	208	0	0	0	178	737
8:15	173	119	0	0	0	0	0	187	0	0	0	178	657
8:30	155	113	0	0	0	0	0	197	0	1	0	169	635
8:45	141	126	0	0	0	0	0	180	0	2	0	153	602
Total Volume:	1468	1073	0	0	0	0	0	1689	0	3	0	1303	5536
Approach %	58%	42%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	
Peak Hr Begin:	7:15												
PHV	805	593	0	0	0	0	0	928	0	0	0	657	2983
PHF	0.922			0.000			0.862			0.923			0.937

Turning Movement Count Report PM

Location ID: 21
North/South: Eastern Avenue (NB) / Altlantic Blvd (SB)
East/West: Atlantic Blvd (EB)
Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	283	219	0	0	0	0	0	163	0	4	0	203	872
16:15	260	221	2	0	0	0	0	198	0	3	0	215	899
16:30	306	214	1	0	0	0	0	204	0	0	0	200	925
16:45	302	231	0	0	0	0	0	216	0	1	0	201	951
17:00	345	233	0	0	0	0	0	203	0	1	0	211	993
17:15	354	245	1	0	0	0	0	215	0	2	0	199	1016
17:30	334	252	0	0	0	0	0	193	0	1	0	227	1007
17:45	304	227	0	0	0	0	0	191	0	1	0	236	959
Total Volume:	2488	1842	4	0	0	0	0	1583	0	13	0	1692	7622
Approach %	57%	43%	0%	0%	0%	0%	0%	100%	0%	1%	0%	99%	
Peak Hr Begin:	17:00												
PHV	1337	957	1	0	0	0	0	802	0	5	0	873	3975
PHF	0.956			0.000			0.933			0.926			0.978

Pedestrian/Bicycle Count Report

Location ID: 21
North/South: Eastern Avenue (NB) / Altlantic Blvd (SB)
East/West: Atlantic Blvd (EB)

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	2	2	0	0
7:30	0	0	0	0	1	0	0	0
7:45	0	0	0	0	5	0	0	2
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	2	0	0	0
8:30	0	0	0	0	1	1	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	1	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	1	0	0	0
17:00	0	0	0	0	1	0	0	0
17:15	0	0	0	0	3	1	0	0
17:30	0	0	0	0	1	0	0	0
17:45	0	0	0	0	1	0	0	0

Turning Movement Count Report AM

Location ID: 22
North/South: Eastern Avenue
East/West: I-5 Ramps/Stevens Place

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	89	33	94	3	42	10	98	1	1	23	0	394
7:15	1	100	44	103	4	59	13	134	0	0	13	1	472
7:30	3	100	46	91	1	47	7	133	0	0	14	0	442
7:45	3	119	49	134	3	65	8	126	1	0	16	2	526
8:00	4	85	40	106	1	70	5	109	0	0	13	0	433
8:15	2	80	33	93	3	47	2	109	0	1	18	0	388
8:30	2	74	36	85	0	68	9	104	0	1	10	0	389
8:45	2	80	34	89	1	61	5	108	0	0	9	3	392
Total Volume:	17	727	315	795	16	459	59	921	2	3	116	6	3436
Approach %	2%	69%	30%	63%	1%	36%	6%	94%	0%	2%	93%	5%	
Peak Hr Begin:	7:15												
PHV	11	404	179	434	9	241	33	502	1	0	56	3	1873
PHF	0.868			0.847			0.912			0.819			0.890

Turning Movement Count Report PM

Location ID: 22
North/South: Eastern Avenue
East/West: I-5 Ramps/Stevens Place

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	9	173	46	29	0	16	6	129	0	3	13	3	427
16:15	4	166	60	47	1	22	8	149	0	4	6	5	472
16:30	5	156	51	36	5	15	7	164	0	3	5	1	448
16:45	11	144	62	37	5	10	3	179	0	4	5	3	463
17:00	5	167	60	48	3	23	9	163	1	5	7	0	491
17:15	3	186	74	32	5	22	11	180	0	3	10	5	531
17:30	4	173	60	42	2	27	4	149	0	3	7	6	477
17:45	6	183	49	39	3	24	10	149	0	3	4	6	476
Total Volume:	47	1348	462	310	24	159	58	1262	1	28	57	29	3785
Approach %	3%	73%	25%	63%	5%	32%	4%	96%	0%	25%	50%	25%	
Peak Hr Begin:	17:00												
PHV	18	709	243	161	13	96	34	641	1	14	28	17	1975
PHF	0.922			0.912			0.885			0.819			0.930

Pedestrian/Bicycle Count Report

Location ID: 22
North/South: Eastern Avenue
East/West: I-5 Ramps/Stevens Place

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	2	0	0	0	0	1
7:30	0	0	0	0	0	0	1	0
7:45	0	0	4	0	0	0	0	0
8:00	0	0	0	0	0	0	1	0
8:15	0	0	1	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	1	0	0	0	0	1
16:15	0	0	4	0	0	0	0	0
16:30	0	0	2	0	0	0	0	0
16:45	0	0	5	0	0	0	1	1
17:00	0	0	4	0	0	0	1	0
17:15	0	0	0	0	0	0	1	0
17:30	0	0	1	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 23
North/South: Atlantic Blvd
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	29	123	7	3	150	11	17	119	15	9	86	17	586
7:15	41	144	3	3	12	9	8	136	22	16	79	14	487
7:30	52	131	3	4	126	14	5	131	10	16	87	15	594
7:45	42	145	1	9	135	8	10	118	20	24	93	17	622
8:00	26	160	4	4	102	6	7	144	7	13	129	22	624
8:15	22	135	5	5	133	9	5	120	9	18	134	21	616
8:30	21	110	0	7	98	9	16	137	9	19	115	14	555
8:45	20	111	2	2	96	5	10	139	7	14	98	17	521
Total Volume:	253	1059	25	37	852	71	78	1044	99	129	821	137	4605
Approach %	19%	79%	2%	4%	89%	7%	6%	86%	8%	12%	76%	13%	
Peak Hr Begin:	7:30												
PHV	142	571	13	22	496	37	27	513	46	71	443	75	2456
PHF	0.955			0.913			0.927			0.851			0.984

Turning Movement Count Report PM

Location ID: 23
North/South: Atlantic Blvd
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	31	193	1	9	168	13	6	168	27	11	136	16	779
16:15	33	188	1	6	161	13	5	169	36	14	186	19	831
16:30	45	192	1	7	160	19	6	154	33	13	158	22	810
16:45	48	228	2	12	170	14	3	168	27	16	122	19	829
17:00	39	227	2	6	206	12	3	155	24	19	146	21	860
17:15	38	253	2	12	218	17	9	157	17	16	137	16	892
17:30	44	249	4	9	171	10	6	172	19	6	119	24	833
17:45	52	200	1	10	152	14	4	182	18	13	138	22	806
Total Volume:	330	1730	14	71	1406	112	42	1325	201	108	1142	159	6640
Approach %	16%	83%	1%	4%	88%	7%	3%	85%	13%	8%	81%	11%	
Peak Hr Begin:	16:45												
PHV	169	957	10	39	765	53	21	652	87	57	524	80	3414
PHF	0.956			0.867			0.960			0.888			0.957

Pedestrian/Bicycle Count Report

Location ID: 23
North/South: Atlantic Blvd
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	3	1	5	0	7	0	4	1
7:15	4	0	2	0	0	0	2	1
7:30	4	0	2	0	2	0	6	1
7:45	2	0	1	0	0	0	0	0
8:00	2	0	7	0	6	0	3	0
8:15	1	0	1	0	0	0	2	0
8:30	1	0	1	1	3	0	3	0
8:45	2	0	1	0	0	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	5	0	4	1	0	0	2	0
16:15	0	1	1	0	1	0	5	2
16:30	2	0	9	1	1	0	1	0
16:45	4	0	7	0	0	0	3	0
17:00	2	0	3	0	5	0	2	0
17:15	3	0	7	0	2	0	1	1
17:30	1	0	0	0	0	1	2	1
17:45	1	0	2	0	1	0	3	0

Turning Movement Count Report AM

Location ID: 24
North/South: Eastern Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	3	84	4	5	161	7	4	90	12	16	79	1	466
7:15	2	114	11	4	134	9	2	111	19	18	59	1	484
7:30	8	129	8	3	156	9	2	93	15	16	72	5	516
7:45	4	126	9	5	140	6	3	95	17	14	77	7	503
8:00	8	103	10	9	123	10	8	96	16	22	90	6	501
8:15	5	101	6	1	112	11	2	94	15	16	96	5	464
8:30	3	108	9	7	97	7	4	105	15	15	95	3	468
8:45	4	108	5	8	95	14	13	89	12	15	82	4	449
Total Volume:	37	873	62	42	1018	73	38	773	121	132	650	32	3851
Approach %	4%	90%	6%	4%	90%	6%	4%	83%	13%	16%	80%	4%	
Peak Hr Begin:	7:15												
PHV	22	472	38	21	553	34	15	395	67	70	298	19	2004
PHF	0.917			0.905			0.903			0.820			0.971

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 24
North/South: Eastern Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	5	130	19	8	144	6	15	123	21	22	174	8	675
16:15	4	113	16	2	130	3	9	118	27	26	187	6	641
16:30	5	142	14	9	132	4	8	167	12	35	161	6	695
16:45	5	111	15	4	167	6	9	144	22	14	139	12	648
17:00	14	147	17	12	136	4	4	140	24	12	152	10	672
17:15	6	151	8	6	169	12	4	145	29	15	169	7	721
17:30	7	166	7	7	121	16	4	153	27	13	153	7	681
17:45	9	17	9	3	125	9	7	109	18	12	149	8	475
Total Volume:	55	977	105	51	1124	60	60	1099	180	149	1284	64	5208
Approach %	5%	86%	9%	4%	91%	5%	4%	82%	13%	10%	86%	4%	
Peak Hr Begin:	16:30												
PHV	30	551	54	31	604	26	25	596	87	76	621	35	2736
PHF	0.892			0.884			0.947			0.906			0.949

Pedestrian/Bicycle Count Report

Location ID: 24
North/South: Eastern Avenue
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	2	1	3	0	1	0	0	0
7:15	1	0	0	1	0	0	0	0
7:30	1	0	3	0	2	0	1	0
7:45	0	0	0	0	0	0	1	2
8:00	1	1	2	0	1	0	2	1
8:15	0	0	0	0	0	0	0	0
8:30	0	0	1	0	0	0	0	0
8:45	0	0	0	0	0	1	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	1	1
16:15	2	0	0	1	1	0	4	0
16:30	1	0	1	0	0	0	0	1
16:45	0	0	0	0	0	0	1	0
17:00	0	1	2	1	0	0	2	2
17:15	3	0	1	0	3	0	4	0
17:30	1	0	2	0	0	0	1	0
17:45	3	0	1	1	1	0	0	0

Turning Movement Count Report AM

Location ID: 25
North/South: I-5 Ramps
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	22	0	123	0	249	21	0	0	0	0	102	0	517
7:15	20	1	139	0	305	28	0	0	0	0	96	0	589
7:30	27	0	146	0	259	15	0	0	0	0	156	0	603
7:45	30	0	164	0	304	16	0	0	0	0	188	0	702
8:00	29	0	181	0	249	23	0	0	0	0	142	0	624
8:15	19	1	140	0	228	15	0	0	0	0	146	0	549
8:30	30	0	134	0	218	10	0	0	0	0	99	0	491
8:45	18	0	156	0	200	8	0	0	0	0	111	0	493
Total Volume:	195	2	1183	0	2012	136	0	0	0	0	1040	0	4568
Approach %	14%	0%	86%	0%	94%	6%	0%	0%	0%	0%	100%	0%	
Peak Hr Begin:	7:15												
PHV	106	1	630	0	1117	82	0	0	0	0	582	0	2518
PHF	0.877			0.900			0.000			0.774			0.897

Turning Movement Count Report PM

Location ID: 25
North/South: I-5 Ramps
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	9	0	57	0	209	51	0	0	0	0	226	0	552
16:15	5	0	57	0	226	43	0	0	0	0	259	0	590
16:30	10	0	60	0	221	49	0	0	0	0	314	0	654
16:45	5	1	56	0	237	53	0	0	0	0	271	0	623
17:00	7	0	53	0	217	61	0	0	0	0	259	0	597
17:15	4	0	52	0	243	43	0	0	0	0	313	0	655
17:30	7	0	52	0	223	53	0	0	0	0	275	0	610
17:45	5	0	47	0	179	48	0	0	0	0	292	0	571
Total Volume:	52	1	434	0	1755	401	0	0	0	0	2209	0	4852
Approach %	11%	0%	89%	0%	81%	19%	0%	0%	0%	0%	100%	0%	
Peak Hr Begin:	16:30												
PHV	26	1	221	0	918	206	0	0	0	0	1157	0	2529
PHF	0.886			0.969			0.000			0.921			0.965

Pedestrian/Bicycle Count Report

Location ID: 25
North/South: I-5 Ramps
East/West: Washington Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	1	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	2	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	1	0	1	0	0	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	1	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	1	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 27
North/South: Garfield Avenue
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	146	195	81	82	41	33	18	215	22	10	53	28	924
7:15	186	189	53	68	53	33	34	210	19	6	50	32	933
7:30	166	188	74	87	44	40	37	223	31	6	59	43	998
7:45	228	198	66	104	55	45	17	248	16	6	64	35	1082
8:00	168	222	65	80	45	45	18	231	13	9	33	35	964
8:15	162	205	68	86	37	47	24	231	14	7	50	40	971
8:30	158	171	68	74	39	38	23	185	30	12	31	42	871
8:45	138	140	59	77	34	34	15	170	14	8	40	26	755
Total Volume:	1352	1508	534	658	348	315	186	1713	159	64	380	281	7498
Approach %	40%	44%	16%	50%	26%	24%	9%	83%	8%	9%	52%	39%	
Peak Hr Begin:	7:30												
PHV	724	813	273	357	181	177	96	933	74	28	206	153	4015
PHF	0.920			0.876			0.948			0.896			0.928

Turning Movement Count Report PM

Location ID: 27
North/South: Garfield Avenue
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	68	241	60	29	11	9	46	240	16	19	187	40	966
16:15	70	241	64	25	7	12	36	181	9	26	228	48	947
16:30	66	271	64	35	12	18	47	216	17	32	189	62	1029
16:45	66	267	54	45	10	15	40	207	7	23	220	62	1016
17:00	89	277	62	42	13	10	53	247	9	15	191	47	1055
17:15	55	233	65	36	19	11	42	196	8	11	215	46	937
17:30	46	295	59	34	15	6	51	237	4	13	175	50	985
17:45	50	243	46	24	11	3	48	204	6	14	225	61	935
Total Volume:	510	2068	474	270	98	84	363	1728	76	153	1630	416	7870
Approach %	17%	68%	16%	60%	22%	19%	17%	80%	4%	7%	74%	19%	
Peak Hr Begin:	16:15												
PHV	291	1056	244	147	42	55	176	851	42	96	828	219	4047
PHF	0.929			0.871			0.865			0.937			0.959

Pedestrian/Bicycle Count Report

Location ID: 27
North/South: Garfield Avenue
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	3	0	1	1	0	1
7:15	0	0	2	0	0	0	2	2
7:30	1	0	6	1	1	1	2	1
7:45	0	0	6	4	0	0	1	2
8:00	1	1	3	0	0	0	0	2
8:15	0	0	1	0	0	0	1	1
8:30	0	0	3	1	0	0	0	0
8:45	0	0	3	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	1	0	1	2	0	0	2	2
16:15	0	0	1	1	0	0	0	0
16:30	0	0	3	0	1	0	3	3
16:45	1	0	1	0	1	1	3	5
17:00	0	0	2	0	0	0	0	3
17:15	0	0	2	0	0	0	3	2
17:30	1	0	1	1	0	1	1	2
17:45	0	0	0	0	0	0	1	1

Turning Movement Count Report AM

Location ID: 28
North/South: I-5 Ramps
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	108	0	16	0	53	0	0	0	0	0	13	118	308
7:15	90	0	11	0	60	0	0	0	0	0	13	126	300
7:30	108	0	19	0	57	0	0	0	0	0	17	147	348
7:45	138	0	33	1	74	0	0	0	0	0	26	117	389
8:00	133	0	36	0	51	0	0	0	0	0	23	89	332
8:15	121	0	36	0	41	0	0	0	0	0	16	120	334
8:30	106	0	22	0	42	0	0	0	0	0	20	103	293
8:45	94	0	18	0	48	0	0	0	0	0	18	99	277
Total Volume:	898	0	191	1	426	0	0	0	0	0	146	919	2581
Approach %	82%	0%	18%	0%	100%	0%	0%	0%	0%	0%	14%	86%	
Peak Hr Begin:	7:30												
PHV	500	0	124	1	223	0	0	0	0	0	82	473	1403
PHF	0.912			0.747			0.000			0.846			0.902

Turning Movement Count Report PM

Location ID: 28
North/South: I-5 Ramps
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	12	0	15	2	31	0	0	0	0	0	76	225	361
16:15	18	0	7	1	25	0	0	0	0	0	85	238	374
16:30	16	0	6	0	41	0	0	0	0	0	80	238	381
16:45	16	0	7	0	42	0	0	0	0	0	74	220	359
17:00	12	0	10	3	43	0	0	0	0	0	94	226	388
17:15	24	0	9	2	36	0	0	0	0	0	102	215	388
17:30	12	0	10	3	38	0	0	0	0	0	78	222	363
17:45	7	0	6	1	28	0	0	0	0	0	84	221	347
Total Volume:	117	0	70	12	284	0	0	0	0	0	673	1805	2961
Approach %	63%	0%	37%	4%	96%	0%	0%	0%	0%	0%	27%	73%	
Peak Hr Begin:	16:30												
PHV	68	0	32	5	162	0	0	0	0	0	350	899	1516
PHF	0.758			0.908			0.000			0.976			0.977

Pedestrian/Bicycle Count Report

Location ID: 28
North/South: I-5 Ramps
East/West: Bandini Blvd

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 29
North/South: Hoefner Ave
East/West: Citadel Valet Driveway

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	1	1	0	0	0	0	17	0	0	0	0	19
7:15	0	0	0	0	0	0	0	26	0	0	0	0	26
7:30	0	4	0	0	0	1	1	19	0	0	0	0	25
7:45	0	9	0	0	0	0	0	23	0	0	0	0	32
8:00	0	6	0	0	0	0	0	15	0	0	0	0	21
8:15	0	6	0	0	0	1	1	26	0	0	0	0	34
8:30	0	4	0	0	0	0	1	21	0	0	0	0	26
8:45	0	3	0	0	0	0	0	23	0	0	0	0	26
Total Volume:	0	33	1	0	0	2	3	170	0	0	0	0	209
Approach %	0%	97%	3%	0%	0%	100%	2%	98%	0%	0%	0%	0%	
Peak Hr Begin:	7:45												
PHV	0	25	0	0	0	1	2	85	0	0	0	0	113
PHF	0.694			0.250			0.806			0.000			0.831

Turning Movement Count Report PM

Location ID: 29
North/South: Hoefner Ave
East/West: Citadel Valet Driveway

Date: 05/19/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	8	1	1	0	1	2	24	0	0	0	0	37
16:15	0	15	0	0	0	2	2	24	0	0	0	0	43
16:30	0	14	0	0	0	1	0	28	0	0	0	0	43
16:45	0	14	0	1	0	0	2	45	0	0	0	0	62
17:00	0	9	2	1	0	1	2	31	0	0	0	0	46
17:15	0	10	1	2	0	1	1	24	0	0	0	0	39
17:30	0	12	1	1	0	2	3	34	0	0	0	0	53
17:45	0	9	1	0	0	1	2	34	0	0	0	0	47
Total Volume:	0	91	6	6	0	9	14	244	0	0	0	0	370
Approach %	0%	94%	6%	40%	0%	60%	5%	95%	0%	0%	0%	0%	
Peak Hr Begin:	16:45												
PHV	0	45	4	5	0	4	8	134	0	0	0	0	200
PHF	0.875			0.750			0.755			0.000			0.806

Pedestrian/Bicycle Count Report

Location ID: 29
North/South: Hoefner Ave
East/West: Citadel Valet Driveway

Date: 05/19/16
City: Commerce, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	1	0	0	0	0	0
7:45	0	0	1	0	1	0	0	0
8:00	0	0	1	0	0	0	0	0
8:15	0	0	2	0	1	0	0	0
8:30	0	0	3	0	2	0	0	0
8:45	0	0	1	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	19	0	7	0	0	0
16:15	0	0	7	0	1	0	0	0
16:30	0	0	6	0	1	0	0	0
16:45	6	0	3	0	3	0	0	0
17:00	2	0	2	0	1	0	0	0
17:15	5	0	5	0	1	0	0	0
17:30	0	0	3	0	0	0	0	0
17:45	6	0	6	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 1
North/South: Atlantic Blvd
East/West: Whittier Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	33	169	51	38	160	30	23	128	21	19	159	24	855
12:15	25	165	47	42	162	34	25	139	21	15	153	25	853
12:30	34	163	53	54	183	41	29	131	26	13	178	31	936
12:45	42	188	72	47	186	50	29	109	26	25	167	29	970
13:00	46	157	70	51	135	38	27	140	34	38	185	39	960
13:15	34	162	64	59	183	39	36	138	26	26	183	36	986
13:30	39	169	77	65	200	34	29	118	34	17	184	35	1001
13:45	28	148	68	66	176	46	31	109	22	25	201	35	955

Total Volume:	281	1321	502	422	1385	312	229	1012	210	178	1410	254	7516
Approach %	13%	63%	24%	20%	65%	15%	16%	70%	14%	10%	77%	14%	

Peak Hr Begin:	12:45												
PHV	161	676	283	222	704	161	121	505	120	106	719	139	3917
PHF	0.927			0.909			0.928			0.920			0.978

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	25	1	15	1	0	1	21	0
12:15	26	1	26	1	20	2	26	0
12:30	28	1	24	0	42	3	24	1
12:45	45	4	18	4	45	6	28	3
13:00	26	0	33	3	38	4	36	1
13:15	31	2	25	2	42	2	21	0
13:30	39	2	19	2	24	1	19	1
13:45	17	3	14	4	27	6	25	0

Turning Movement Count Report Mid-Day

Location ID: 2
North/South: Atlantic Blvd
East/West: Olympic Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	39	209	23	23	139	29	14	109	26	35	171	47	864
12:15	44	212	22	24	146	35	8	144	24	51	177	38	925
12:30	52	199	27	26	157	28	8	100	18	31	177	34	857
12:45	40	187	28	16	150	27	10	125	19	18	163	38	821
13:00	44	229	28	18	178	29	29	100	18	29	166	44	912
13:15	38	176	23	28	169	46	13	105	19	28	125	34	804
13:30	39	198	27	25	184	35	7	112	18	34	186	34	899
13:45	46	242	31	22	161	23	5	96	20	22	187	32	887
Total Volume:	342	1652	209	182	1284	252	94	891	162	248	1352	301	6969
Approach %	16%	75%	9%	11%	75%	15%	8%	78%	14%	13%	71%	16%	
Peak Hr Begin:	12:15												
PHV	180	827	105	84	631	119	55	469	79	129	683	154	3515
PHF	0.924			0.927			0.857			0.908			0.950

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	10	0	9	0	6	0	2	1
12:15	5	0	13	1	4	1	3	0
12:30	1	0	11	0	5	0	4	0
12:45	6	1	2	1	3	3	5	1
13:00	8	1	10	0	2	2	2	1
13:15	3	0	12	1	12	1	16	0
13:30	11	1	11	2	8	1	5	2
13:45	4	2	7	2	8	3	6	0

Turning Movement Count Report Mid-Day

Location ID: 3
North/South: Garfield Avenue
East/West: Olympic Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	14	169	12	26	88	20	13	146	27	30	121	23	689
12:15	11	183	17	22	72	24	11	177	34	23	105	37	716
12:30	16	197	9	19	120	17	14	192	32	37	117	24	794
12:45	15	174	15	22	96	11	21	168	41	43	107	25	738
13:00	20	171	21	18	95	26	27	167	40	34	139	28	786
13:15	12	183	14	24	84	17	17	202	37	43	96	15	744
13:30	6	209	15	21	96	27	12	183	31	44	113	21	778
13:45	16	204	11	33	69	16	15	184	43	41	110	21	763
Total Volume:	110	1490	114	185	720	158	130	1419	285	295	908	194	6008
Approach %	6%	87%	7%	17%	68%	15%	7%	77%	16%	21%	65%	14%	
Peak Hr Begin:	13:00												
PHV	54	767	61	96	344	86	71	736	151	162	458	85	3071
PHF	0.955			0.913			0.936			0.877			0.977

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	5	0	1	0	2	0	3	0
12:15	6	0	0	0	5	1	2	1
12:30	0	0	2	1	1	1	1	1
12:45	3	0	3	0	3	0	6	2
13:00	9	0	5	0	5	1	4	3
13:15	7	0	4	0	3	2	9	2
13:30	0	0	3	1	4	0	3	0
13:45	0	0	2	0	5	1	8	1

Turning Movement Count Report Mid-Day

Location ID: 4
North/South: ATLANTIC BOULEVARD/TRIGGS STREET/GOODRICH
East/West: TELEGRAPH ROAD/FERGUSON DRIVE

Date: 05/14/16
City: Commerce, CA

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
12:00	13	27	220	5	1	0	7	2	1	35	8	42	36	54	119	56	8	42	25	88	15	11	2	817
12:15	15	18	248	3	0	0	11	0	1	25	7	30	49	64	156	51	9	39	22	108	19	9	5	889
12:30	6	18	261	4	1	0	12	1	3	27	5	35	37	70	105	54	8	35	21	105	18	8	1	835
12:45	8	17	250	1	0	0	8	0	5	21	3	37	46	72	148	55	15	31	18	138	23	9	2	907
13:00	16	22	248	3	0	0	8	2	0	34	6	47	43	76	110	65	8	43	23	112	17	7	0	890
13:15	13	19	251	6	3	0	9	3	3	32	7	38	44	66	124	54	11	27	26	133	22	12	1	904
13:30	17	10	293	1	0	0	10	0	2	29	9	55	37	75	109	33	14	44	20	114	16	9	2	899
13:45	12	18	246	1	0	0	8	2	2	28	5	50	35	64	104	50	10	38	22	123	21	13	4	856

	Southbound Atlantic						*SWB Goodrich*	*Westbound Ferguson*					*Northbound Atlantic*					*EB Triggs*	*Eastbound Telegraph*					Totals:
	1	**2**	**3**	**4**		**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
12:00-13:00	42	80	979	13	2	0	38	3	10	108	23	144	168	260	528	216	40	147	86	439	75	37	10	3448
12:15-13:15	45	75	1007	11	1	0	39	3	9	107	21	149	175	282	519	225	40	148	84	463	77	33	8	3521
12:30-13:30	43	76	1010	14	4	0	37	6	11	114	21	157	170	284	487	228	42	136	88	488	80	36	4	3536
12:45-13:45	54	68	1042	11	3	0	35	5	10	116	25	177	170	289	491	207	48	145	87	497	78	37	5	3600
13:00-14:00	58	69	1038	11	3	0	35	7	7	123	27	190	159	281	447	202	43	152	91	482	76	41	7	3549

Turning Movement Count Report Mid-Day

Location ID: 5
North/South: Garfield Avenue
East/West: Flotilla Street

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	15	203	8	15	3	1	5	178	2	1	5	13	449
12:15	24	191	11	12	3	0	2	217	3	5	5	28	501
12:30	40	206	13	14	3	4	5	210	3	5	3	26	532
12:45	25	229	12	10	1	1	3	209	3	3	5	16	517
13:00	33	186	21	33	3	9	0	205	1	0	3	23	517
13:15	24	215	15	17	3	6	2	193	5	3	4	33	520
13:30	43	200	19	27	2	2	2	216	0	10	2	19	542
13:45	32	239	19	15	5	0	2	227	3	5	2	22	571
Total Volume:	236	1669	118	143	23	23	21	1655	20	32	29	180	4149
Approach %	12%	83%	6%	76%	12%	12%	1%	98%	1%	13%	12%	75%	
Peak Hr Begin:	13:00												
PHV	132	840	74	92	13	17	6	841	9	18	11	97	2150
PHF	0.902			0.678			0.922			0.788			0.941

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	1	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	1	0
12:30	1	0	0	0	1	0	1	0
12:45	1	0	0	0	1	0	1	0
13:00	4	0	0	0	1	0	3	0
13:15	0	0	0	1	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	1	0	0	2	0

Turning Movement Count Report Mid-Day

Location ID: 6
North/South: West Citadel Driveway
East/West: Smithway St

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	0	0	0	0	28	3	7	0	18	40	31	0	127
12:15	0	0	0	0	24	7	9	0	16	33	21	0	110
12:30	0	0	0	0	32	6	8	0	19	36	23	0	124
12:45	0	0	0	0	37	9	9	0	10	40	38	0	143
13:00	0	0	0	0	44	5	2	0	14	43	24	0	132
13:15	0	0	0	0	41	6	7	0	24	37	36	0	151
13:30	0	0	0	0	49	12	5	0	22	41	45	0	174
13:45	0	0	0	0	43	11	10	0	16	33	37	0	150
Total Volume:	0	0	0	0	298	59	57	0	139	303	255	0	1111
Approach %	0%	0%	0%	0%	83%	17%	29%	0%	71%	54%	46%	0%	
Peak Hr Begin:	13:00												
PHV	0	0	0	0	177	34	24	0	76	154	142	0	607
PHF	0.000			0.865			0.806			0.860			0.872

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	1	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	2	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	1	0
13:15	0	0	0	0	0	0	8	0
13:30	0	0	6	0	0	0	5	0
13:45	0	0	0	0	0	0	3	0

Turning Movement Count Report Mid-Day

Location ID: 7
North/South: East Citadel Driveway
East/West: Smithway St

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	0	0	0	0	11	15	23	0	19	12	28	1	109
12:15	0	0	0	0	16	12	19	0	15	7	20	0	89
12:30	0	0	0	0	14	13	15	0	26	10	22	1	101
12:45	0	0	0	0	26	16	16	0	22	15	31	0	126
13:00	0	0	0	0	16	18	20	0	30	8	18	0	110
13:15	0	0	0	0	19	15	21	0	28	15	25	1	124
13:30	0	0	0	0	28	10	21	0	35	20	27	0	141
13:45	0	0	0	0	27	23	21	0	20	18	26	0	135
Total Volume:	0	0	0	0	157	122	156	0	195	105	197	3	935
Approach %	0%	0%	0%	0%	56%	44%	44%	0%	56%	34%	65%	1%	
Peak Hr Begin:	13:00												
PHV	0	0	0	0	90	66	83	0	113	61	96	1	510
PHF	0.000			0.780			0.875			0.840			0.904

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	2	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	2	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	7	1	0	0
13:15	0	0	0	0	3	0	0	0
13:30	0	0	0	0	8	0	0	0
13:45	0	0	0	0	9	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 8
North/South: Tubeway Avenue
East/West: Smithway Street

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	9	11	0	0	0	0	0	10	7	29	0	10	76
12:15	11	22	0	0	0	0	0	16	12	23	0	9	93
12:30	17	21	0	0	0	0	0	15	9	25	0	8	95
12:45	12	15	0	0	0	0	0	17	10	18	0	10	82
13:00	14	43	0	0	0	0	0	18	10	26	0	17	128
13:15	9	24	0	0	0	0	0	17	11	14	0	10	85
13:30	19	22	0	0	0	0	0	13	7	31	0	17	109
13:45	16	18	0	0	0	0	0	17	11	26	0	16	104
Total Volume:	107	176	0	0	0	0	0	123	77	192	0	97	772
Approach %	38%	62%	0%	0%	0%	0%	0%	62%	39%	66%	0%	34%	
Peak Hr Begin:	13:00												
PHV	58	107	0	0	0	0	0	65	39	97	0	60	426
PHF	0.724			0.000			0.929			0.818			0.832

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	1	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 9
North/South: Washington Blvd
East/West: Saybrook Avenue

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	0	216	0	0	0	0	0	200	2	10	0	0	428
12:15	0	229	0	0	0	0	0	225	13	4	0	0	471
12:30	0	186	0	0	0	0	0	212	8	4	0	0	410
12:45	0	188	0	0	0	0	0	195	2	3	0	0	388
13:00	1	245	0	0	0	0	0	204	2	7	0	1	460
13:15	0	182	0	0	0	0	0	204	4	3	0	1	394
13:30	1	232	0	0	0	0	0	225	4	7	0	0	469
13:45	0	202	0	0	0	0	0	223	5	2	0	1	433
Total Volume:	2	1680	0	0	0	0	0	1688	40	40	0	3	3453
Approach %	0%	100%	0%	0%	0%	0%	0%	98%	2%	93%	0%	7%	
Peak Hr Begin:	13:00												
PHV	2	861	0	0	0	0	0	856	15	19	0	3	1756
PHF	0.877			0.000			0.951			0.688			0.936

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 10
North/South: Garfield Avenue
East/West: Washington Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	56	119	40	30	124	10	4	101	3	2	139	43	671
12:15	45	113	39	47	183	10	11	127	3	4	157	34	773
12:30	45	120	57	34	145	15	6	134	10	9	181	45	801
12:45	45	109	45	43	143	14	13	131	3	10	133	38	727
13:00	51	122	38	44	158	7	10	124	3	5	140	38	740
13:15	47	111	47	36	146	9	9	111	2	5	161	46	730
13:30	59	113	55	53	156	12	7	123	3	6	142	45	774
13:45	61	119	66	55	140	10	9	108	8	7	172	61	816
Total Volume:	409	926	387	342	1195	87	69	959	35	48	1225	350	6032
Approach %	24%	54%	22%	21%	74%	5%	6%	90%	3%	3%	75%	22%	

Peak Hr Begin:	13:00												
PHV	218	465	206	188	600	38	35	466	16	23	615	190	3060
PHF	0.903			0.934			0.943			0.863			0.938

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	1	0	0	0	0	0
12:15	1	0	0	0	0	0	0	0
12:30	0	2	0	0	1	0	0	0
12:45	4	0	0	0	0	0	1	0
13:00	0	3	0	0	0	0	0	0
13:15	1	0	0	0	0	0	0	0
13:30	0	0	0	0	1	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 11
North/South: Atlantic Blvd
East/West: Telegraph Rd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	304	0	113	0	101	71	158	189	0	0	0	0	936
12:15	308	0	124	0	116	59	162	205	0	0	0	0	974
12:30	298	0	143	0	112	51	153	157	0	0	0	0	914
12:45	351	0	115	0	107	62	198	238	0	0	0	0	1071
13:00	328	0	135	0	96	52	163	200	0	0	0	0	974
13:15	316	0	141	0	112	83	194	163	0	0	0	0	1009
13:30	365	0	156	0	124	86	181	169	0	0	0	0	1081
13:45	328	0	141	0	118	72	199	148	0	0	0	0	1006
Total Volume:	2598	0	1068	0	886	536	1408	1469	0	0	0	0	7965
Approach %	71%	0%	29%	0%	62%	38%	49%	51%	0%	0%	0%	0%	
Peak Hr Begin:	12:45												
PHV	1360	0	547	0	439	283	736	770	0	0	0	0	4135
PHF	0.915			0.860			0.864			0.000			0.956

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	3	3
12:30	0	0	0	0	0	0	2	1
12:45	0	0	0	0	0	0	0	3
13:00	0	0	0	0	0	0	0	1
13:15	0	0	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	2
13:45	0	0	0	0	0	0	0	1

Turning Movement Count Report Mid-Day

Location ID: 12
North/South: Camfield Avenue
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	33	20	3	4	123	59	15	2	28	23	213	36	559
12:15	32	23	2	4	93	67	18	3	47	28	226	39	582
12:30	30	23	5	2	98	62	16	6	28	18	232	38	558
12:45	38	24	6	4	113	86	20	6	35	17	249	48	646
13:00	41	22	6	1	86	77	17	1	25	16	209	51	552
13:15	45	29	8	2	106	62	25	3	31	14	255	65	645
13:30	49	31	5	4	130	68	16	3	50	17	270	56	699
13:45	36	34	7	5	100	77	20	1	39	9	273	52	653

Total Volume:	304	206	42	26	849	558	147	25	283	142	1927	385	4894
Approach %	55%	37%	8%	2%	59%	39%	32%	5%	62%	6%	79%	16%	

Peak Hr Begin:	13:00												
PHV	171	116	26	12	422	284	78	8	145	56	1007	224	2549
PHF	0.921			0.889			0.837			0.938			0.912

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	1	1	0	0	0	0	1	0
12:15	8	1	0	0	0	0	1	0
12:30	8	0	0	0	0	0	3	0
12:45	1	0	0	0	0	0	1	0
13:00	8	2	0	0	0	0	0	0
13:15	10	1	0	0	0	0	1	1
13:30	6	3	0	0	0	0	0	0
13:45	14	0	0	0	0	0	1	0

Turning Movement Count Report Mid-Day

Location ID: 13
North/South: Hoefner Avenue
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	14	0	3	15	164	0	0	0	0	0	174	63	433
12:15	8	0	6	10	153	0	0	0	0	0	208	35	420
12:30	10	0	3	18	146	0	0	0	0	0	206	50	433
12:45	16	0	1	12	178	0	0	0	0	0	211	79	497
13:00	13	0	5	20	154	0	0	0	0	0	187	49	428
13:15	17	0	2	16	158	0	0	0	0	0	253	51	497
13:30	18	0	1	22	175	0	0	0	0	0	229	59	504
13:45	15	0	7	24	165	0	0	0	0	0	255	62	528
Total Volume:	111	0	28	137	1293	0	0	0	0	0	1723	448	3740
Approach %	80%	0%	20%	10%	90%	0%	0%	0%	0%	0%	79%	21%	
Peak Hr Begin:	13:00												
PHV	63	0	15	82	652	0	0	0	0	0	924	221	1957
PHF	0.886			0.931			0.000			0.903			0.927

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	2	1	0	0	0	0	0	0
12:15	11	0	0	0	0	0	0	0
12:30	3	1	0	0	0	0	0	0
12:45	2	0	0	0	0	0	0	0
13:00	6	2	0	0	0	0	0	0
13:15	8	0	0	0	0	0	0	0
13:30	4	3	0	0	0	0	0	0
13:45	14	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 14
North/South: Citadel Drive
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	51	0	26	92	128	0	0	0	0	0	65	126	488
12:15	43	0	22	79	120	0	0	0	0	0	83	124	471
12:30	46	0	27	75	140	0	0	0	0	0	85	136	509
12:45	47	0	38	60	136	0	0	0	0	0	83	133	497
13:00	52	0	22	84	123	0	0	0	0	0	71	120	472
13:15	57	0	29	64	128	0	0	0	0	0	105	136	519
13:30	61	0	24	85	150	0	0	0	0	0	83	147	550
13:45	53	0	38	74	132	0	0	0	0	0	107	167	571

Total Volume:	410	0	226	613	1057	0	0	0	0	0	682	1089	4077
Approach %	64%	0%	36%	37%	63%	0%	0%	0%	0%	0%	39%	61%	

Peak Hr Begin:	13:00												
PHV	223	0	113	307	533	0	0	0	0	0	366	570	2112
PHF	0.923			0.894			0.000			0.854			0.925

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	1	0	0	0	0	0	10	0
12:15	1	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	9	0
12:45	1	0	0	0	0	0	0	0
13:00	1	0	0	0	0	0	2	0
13:15	2	1	0	0	0	0	18	0
13:30	3	0	0	0	0	0	0	0
13:45	1	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 15
North/South: Gaspar Avenue
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	26	0	27	22	168	0	0	0	0	0	77	4	324
12:15	32	0	39	28	183	0	0	0	0	0	93	9	384
12:30	49	0	24	25	148	0	0	0	0	0	95	7	348
12:45	62	0	35	31	149	0	0	0	0	0	101	11	389
13:00	46	0	46	19	154	0	0	0	0	0	80	8	353
13:15	48	0	41	22	133	0	0	0	0	0	108	13	365
13:30	62	0	61	44	156	0	0	0	0	0	108	7	438
13:45	63	0	48	35	165	0	0	0	0	0	125	15	451

Total Volume:	388	0	321	226	1256	0	0	0	0	0	787	74	3052
Approach %	55%	0%	45%	15%	85%	0%	0%	0%	0%	0%	91%	9%	

Peak Hr Begin:	13:00												
PHV	219	0	196	120	608	0	0	0	0	0	421	43	1607
PHF	0.843			0.910			0.000			0.829			0.891

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	1	0	0	0	0	0	0	0
12:15	1	0	0	0	0	0	0	0
12:30	1	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	2	0	0	0	0	0	0	0
13:15	1	0	0	0	0	0	0	0
13:30	2	0	0	0	0	0	0	0
13:45	2	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 16
North/South: Tubeway Avenue
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	9	0	35	28	182	0	0	0	0	8	105	0	367
12:15	9	0	48	27	202	0	0	0	0	9	99	0	394
12:30	8	0	44	21	198	0	0	0	0	12	108	0	391
12:45	5	0	31	34	206	0	0	0	0	16	108	0	400
13:00	20	0	54	34	186	0	0	0	0	22	135	0	451
13:15	11	0	32	29	214	0	0	0	0	18	133	0	437
13:30	14	0	42	35	193	0	0	0	0	9	147	0	440
13:45	12	0	41	28	168	1	0	0	0	17	139	0	406
Total Volume:	88	0	327	236	1549	1	0	0	0	111	974	0	3286
Approach %	21%	0%	79%	13%	87%	0%	0%	0%	#DIV/0!	10%	90%	0%	
Peak Hr Begin:	13:00												
PHV	57	0	169	126	761	1	0	0	0	66	554	0	1734
PHF	0.764			0.914			0.000			0.987			0.961

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	6	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	1	1	0	0	0	0	0
12:45	1	0	0	0	0	0	0	0
13:00	2	0	0	0	0	0	0	0
13:15	1	0	0	0	0	0	0	0
13:30	2	1	0	0	0	0	0	0
13:45	1	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 17
North/South: Commerce Casino/I-5 Ramps
East/West: Telegraph Road
Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	1	9	2	11	171	96	41	11	48	10	145	3	548
12:15	5	14	9	11	171	122	43	13	57	18	131	3	597
12:30	1	11	7	14	176	102	47	5	51	19	121	4	558
12:45	5	6	10	19	169	107	57	8	58	12	126	5	582
13:00	6	12	6	16	175	124	45	12	59	20	148	11	634
13:15	6	4	6	14	183	116	56	6	62	14	183	8	658
13:30	3	9	7	14	172	116	60	9	56	13	167	8	634
13:45	1	9	10	8	157	131	49	3	55	13	168	6	610
Total Volume:	28	74	57	107	1374	914	398	67	446	119	1189	48	4821
Approach %	18%	47%	36%	4%	57%	38%	44%	7%	49%	9%	88%	4%	
Peak Hr Begin:	13:00												
PHV	16	34	29	52	687	487	210	30	232	60	666	33	2536
PHF	0.823			0.973			0.944			0.926			0.964

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	10	0
12:15	0	0	0	0	0	0	2	0
12:30	0	1	0	0	0	0	3	0
12:45	0	0	0	0	0	0	7	0
13:00	1	0	0	0	0	0	1	0
13:15	0	0	0	0	0	0	10	0
13:30	0	0	1	0	1	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 18
North/South: Telegraph Road
East/West: Washington Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	49	53	55	99	88	15	17	117	43	36	183	98	853
12:15	64	48	67	117	93	12	7	118	49	36	174	92	877
12:30	82	56	44	119	82	15	15	114	40	32	198	90	887
12:45	84	55	61	99	82	3	6	124	43	31	190	90	868
13:00	80	63	67	118	106	12	8	130	33	34	154	74	879
13:15	72	64	72	107	78	14	7	112	38	30	166	106	866
13:30	98	60	62	127	85	5	9	124	48	44	171	106	939
13:45	88	81	62	134	88	5	8	96	36	56	194	85	933

Total Volume:	617	480	490	920	702	81	77	935	330	299	1430	741	7102
Approach %	39%	30%	31%	54%	41%	5%	6%	70%	25%	12%	58%	30%	

Peak Hr Begin:	13:00												
PHV	338	268	263	486	357	36	32	462	155	164	685	371	3617
PHF	0.940			0.931			0.896			0.910			0.963

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	3	0	0	0	1	0
12:15	1	0	4	0	2	0	0	0
12:30	0	0	0	1	1	0	1	0
12:45	0	0	1	0	1	1	0	0
13:00	0	0	1	0	0	0	0	0
13:15	0	0	3	0	4	0	2	0
13:30	0	0	2	0	4	0	0	0
13:45	2	0	4	0	0	0	1	0

Turning Movement Count Report Mid-Day

Location ID: 19
North/South: Garfield Avenue
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	41	147	12	62	100	55	77	102	26	36	76	0	734
12:15	25	143	8	76	112	69	68	122	18	38	73	4	756
12:30	36	136	8	93	120	65	78	108	32	16	57	4	753
12:45	30	122	7	78	96	72	80	103	12	38	69	2	709
13:00	40	152	7	77	87	58	64	99	34	44	84	3	749
13:15	41	117	4	69	101	56	83	105	32	39	91	5	743
13:30	29	122	5	89	102	59	72	94	33	30	76	2	713
13:45	43	117	6	76	70	50	73	93	32	37	110	2	709

Total Volume:	285	1056	57	620	788	484	595	826	219	278	636	22	5866
Approach %	20%	76%	4%	33%	42%	26%	36%	50%	13%	30%	68%	2%	

Peak Hr Begin:	12:15												
PHV	131	553	30	324	415	264	290	432	96	136	283	13	2967
PHF	0.897			0.902			0.938			0.824			0.981

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	2	0
12:15	1	0	2	0	0	1	1	0
12:30	0	1	0	0	0	0	0	1
12:45	0	0	0	0	0	0	2	0
13:00	0	0	0	1	0	0	1	0
13:15	0	0	0	0	0	0	1	0
13:30	2	0	0	0	0	0	1	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 20
North/South: I-5 Ramps
East/West: Telegraph Road

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	0	0	0	0	104	53	1	0	75	51	90	0	374
12:15	0	0	0	0	120	34	7	0	98	37	108	0	404
12:30	0	0	0	0	147	73	2	0	92	28	111	0	453
12:45	0	0	0	0	128	65	3	0	94	41	110	0	441
13:00	0	0	0	0	123	69	9	0	100	50	107	0	458
13:15	0	0	0	0	121	61	5	0	92	43	136	0	458
13:30	0	0	0	0	127	55	2	0	102	40	130	0	456
13:45	0	0	0	0	100	57	3	0	82	28	137	0	407
Total Volume:	0	0	0	0	970	467	32	0	735	318	929	0	3451
Approach %	0%	0%	0%	0%	68%	32%	4%	0%	96%	26%	74%	0%	
Peak Hr Begin:	12:45												
PHV	0	0	0	0	499	250	19	0	388	174	483	0	1813
PHF	0.000			0.970			0.933			0.918			0.990

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 21
North/South: Eastern Avenue (NB) / Altlantic Blvd (SB)
East/West: Atlantic Blvd (EB)

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	232	145	0	0	0	0	0	183	0	10	0	172	742
12:15	202	175	0	0	0	0	0	175	0	4	0	189	745
12:30	200	155	0	0	0	0	0	150	0	7	0	168	680
12:45	232	168	0	0	0	0	0	203	0	1	0	201	805
13:00	222	135	0	0	0	0	0	191	1	2	0	169	720
13:15	251	161	0	0	0	0	0	177	0	2	0	199	790
13:30	254	158	0	0	0	0	0	161	0	1	0	177	751
13:45	253	154	3	0	0	0	0	174	0	4	0	173	761
Total Volume:	1846	1251	3	0	0	0	0	1414	1	31	0	1448	5994
Approach %	60%	40%	0%	0%	0%	0%	0%	100%	0%	2%	0%	98%	
Peak Hr Begin:	12:45												
PHV	959	622	0	0	0	0	0	732	1	6	0	746	3066
PHF	0.959			0.000			0.903			0.931			0.952

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	2	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	2	1	0	0
12:45	0	0	0	0	0	0	2	0
13:00	0	0	0	0	1	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	1	1	0	0
13:45	0	0	0	0	0	1	0	0

Turning Movement Count Report Mid-Day

Location ID: 22
North/South: Eastern Avenue
East/West: I-5 Ramps/Stevens Place
Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	7	90	65	88	2	14	13	99	1	2	9	0	390
12:15	5	104	62	98	2	5	6	77	0	2	7	3	371
12:30	8	98	53	83	1	13	6	65	0	1	12	2	342
12:45	3	111	59	111	2	8	10	89	0	0	11	2	406
13:00	4	82	62	90	1	7	12	101	0	0	9	2	370
13:15	12	89	58	105	1	8	8	76	1	2	9	3	372
13:30	8	86	71	88	2	6	9	65	0	3	16	0	354
13:45	5	73	59	102	2	9	5	71	0	2	11	3	342
Total Volume:	52	733	489	765	13	70	69	643	2	12	84	15	2947
Approach %	4%	58%	38%	90%	2%	8%	10%	90%	0%	11%	76%	14%	
Peak Hr Begin:	12:00												
PHV	23	403	239	380	7	40	35	330	1	5	39	7	1509
PHF	0.961			0.882			0.810			0.850			0.929

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	3	3	0	0	0	0
12:30	0	0	0	0	0	0	1	0
12:45	0	0	1	2	0	0	0	0
13:00	0	0	1	1	0	0	0	0
13:15	0	0	1	1	0	0	0	0
13:30	0	0	1	1	0	0	0	2
13:45	0	0	0	1	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 23
North/South: Atlantic Blvd
East/West: Washington Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	40	161	3	11	76	14	22	147	20	13	45	13	565
12:15	36	120	5	7	100	8	13	136	11	12	57	19	524
12:30	29	129	6	9	111	15	5	145	20	9	67	14	559
12:45	47	161	5	6	102	9	15	146	19	19	77	29	635
13:00	32	137	5	9	110	16	6	95	14	11	81	29	545
13:15	53	162	2	6	74	9	10	137	8	13	73	31	578
13:30	52	152	9	12	93	10	13	120	10	5	80	27	583
13:45	59	144	3	5	100	10	8	120	12	11	88	29	589
Total Volume:	348	1166	38	65	766	91	92	1046	114	93	568	191	4578
Approach %	22%	75%	2%	7%	83%	10%	7%	84%	9%	11%	67%	22%	
Peak Hr Begin:	12:45												
PHV	184	612	21	33	379	44	44	498	51	48	311	116	2341
PHF	0.941			0.844			0.824			0.950			0.922

Pedestrian/Bicycle Count Report

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	2	0	3	0	0	0	0	0
12:15	3	0	4	0	0	0	0	0
12:30	0	0	1	1	2	0	2	0
12:45	5	0	8	0	1	0	1	0
13:00	3	0	4	0	3	0	0	0
13:15	1	1	1	0	1	0	1	1
13:30	0	0	0	0	0	0	0	0
13:45	0	0	3	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 24
North/South: Eastern Avenue
East/West: Washington Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	18	80	12	10	76	4	2	73	12	5	76	4	372
12:15	6	70	7	6	91	8	8	52	9	8	86	3	354
12:30	9	70	7	10	99	8	9	52	16	3	93	4	380
12:45	6	94	8	4	85	12	6	85	14	5	91	3	413
13:00	8	47	11	8	108	12	4	70	13	6	80	2	369
13:15	7	75	5	8	81	4	4	52	7	7	96	1	347
13:30	6	53	5	7	88	2	5	47	7	7	121	2	350
13:45	5	57	9	12	87	10	5	52	6	6	100	0	349
Total Volume:	65	546	64	65	715	60	43	483	84	47	743	19	2934
Approach %	10%	81%	9%	8%	85%	7%	7%	79%	14%	6%	92%	2%	
Peak Hr Begin:	12:00												
PHV	39	314	34	30	351	32	25	262	51	21	346	14	1519
PHF	0.880			0.882			0.805			0.953			0.919

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	1	0	0	0
12:15	0	0	1	0	0	0	0	0
12:30	0	0	0	0	0	0	2	1
12:45	1	0	2	0	0	0	0	0
13:00	1	0	1	0	2	0	2	0
13:15	0	0	0	0	1	0	1	0
13:30	2	0	0	0	0	0	0	1
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 25
North/South: I-5 Ramps
East/West: Washington Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	23	0	169	0	141	59	0	0	0	42	139	0	573
12:15	12	1	178	0	166	54	0	0	0	33	130	0	574
12:30	22	0	156	0	148	55	0	0	0	44	154	0	579
12:45	21	2	165	0	146	59	0	0	0	38	140	0	571
13:00	17	2	127	0	156	53	0	0	0	43	131	0	529
13:15	19	0	133	0	148	55	0	0	0	47	154	0	556
13:30	12	0	160	0	158	67	0	0	0	42	170	1	610
13:45	11	1	146	0	151	59	0	0	0	47	163	0	578
Total Volume:	137	6	1234	0	1214	461	0	0	0	336	1181	1	4570
Approach %	10%	0%	90%	0%	72%	28%	0%	0%	0%	22%	78%	0%	
Peak Hr Begin:	12:00												
PHV	78	3	668	0	601	227	0	0	0	157	563	0	2297
PHF	0.975			0.941			0.000			0.909			0.992

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	1	0	0	0	0	0	1
12:15	2	0	1	0	0	0	0	0
12:30	2	1	0	0	0	0	0	0
12:45	0	0	1	0	0	0	0	0
13:00	1	0	0	0	0	0	0	0
13:15	1	0	0	0	0	0	1	0
13:30	1	0	0	0	0	0	1	0
13:45	2	0	1	0	0	0	1	0

Turning Movement Count Report Mid-Day

Location ID: 27
North/South: Garfield Avenue
East/West: Bandini Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	31	161	50	36	11	11	4	144	13	6	34	15	516
12:15	27	151	47	40	13	16	3	149	15	8	36	25	530
12:30	41	147	50	38	4	19	1	159	31	6	29	19	544
12:45	41	123	70	45	14	19	8	134	14	6	34	20	528
13:00	30	147	60	44	5	18	7	119	17	12	30	14	503
13:15	43	130	54	43	12	11	7	162	21	3	59	20	565
13:30	33	115	63	43	7	14	6	126	27	5	37	23	499
13:45	40	132	51	48	13	11	5	125	19	6	41	22	513
Total Volume:	286	1106	445	337	79	119	41	1118	157	52	300	158	4198
Approach %	16%	60%	24%	63%	15%	22%	3%	85%	12%	10%	59%	31%	
Peak Hr Begin:	12:30												
PHV	155	547	234	170	35	67	23	574	83	27	152	73	2140
PHF	0.983			0.872			0.890			0.768			0.947

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	2	0	0	0	0	0	0	0
12:15	0	0	1	0	0	0	1	0
12:30	0	0	0	0	0	0	1	0
12:45	0	0	4	0	0	0	0	0
13:00	0	0	0	1	0	0	0	1
13:15	0	0	1	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 28
North/South: I-5 Ramps
East/West: Bandini Blvd

Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	40	0	11	0	25	0	0	0	0	0	31	56	163
12:15	45	0	30	0	23	0	0	0	0	0	22	66	186
12:30	42	0	27	0	20	0	0	0	0	0	34	42	165
12:45	48	0	18	0	22	0	0	0	0	0	33	74	195
13:00	35	0	19	0	27	0	0	0	0	0	36	65	182
13:15	36	0	21	0	31	0	0	0	0	0	33	79	200
13:30	39	0	20	0	26	0	0	0	0	0	31	81	197
13:45	40	0	20	0	25	0	0	0	0	0	35	61	181

Total Volume:	325	0	166	0	199	0	0	0	0	0	255	524	1469
Approach %	66%	0%	34%	0%	100%	0%	0%	0%	0%	0%	33%	67%	

Peak Hr Begin:	12:45												
PHV	158	0	78	0	106	0	0	0	0	0	133	299	774
PHF	0.894			0.855			0.000			0.964			0.968

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 29
North/South: Hoefner Ave
East/West: Citadel Valet Driveway
Date: 05/14/16
City: Commerce, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
12:00	0	7	1	0	0	0	6	56	0	0	0	0	70
12:15	0	11	3	1	0	3	1	47	1	0	0	0	67
12:30	0	10	0	0	0	0	1	61	0	0	0	0	72
12:45	0	11	0	2	0	2	4	70	0	0	0	0	89
13:00	0	11	1	0	0	3	6	60	1	0	0	0	82
13:15	0	11	0	1	0	2	2	63	1	0	0	0	80
13:30	0	10	1	0	0	2	1	70	1	0	0	0	85
13:45	0	8	0	0	0	4	3	72	0	0	0	0	87
Total Volume:	0	79	6	4	0	16	24	499	4	0	0	0	632
Approach %	0%	93%	7%	20%	0%	80%	5%	95%	1%	0%	0%	0%	
Peak Hr Begin:	12:45												
PHV	0	43	2	3	0	9	13	263	3	0	0	0	336
PHF	0.938			0.750			0.943			0.000			0.944

Pedestrian/Bicycle Count Report

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
12:00	0	0	2	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	1	0	2	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	1	0	0	0	0	0
13:30	0	0	5	0	0	0	0	0
13:45	0	0	1	0	0	0	0	0

Appendix B

Intersection Level of Service Worksheets

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	109	0.000		N/S 1:	0.294 *
Southbound	Through	2.00	3,200	661	0.241		N/S 2:	0.281
	Left	1.00	1,600	158	0.099	*	E/W 1:	0.229
	Right	1.00	1,600	105	0.016		E/W 2:	0.329 *
Westbound	Through	2.00	3,200	881	0.275	*		
	Left	1.00	1,600	136	0.085		V/C Ratio:	0.623
	Right	0.00	0	59	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	565	0.195	*	ITS:	0.000
	Left	1.00	1,600	64	0.040			
	Right	1.00	1,600	77	0.028		ICU:	0.723
Eastbound	Through	2.00	3,200	462	0.144			
	Left	1.00	1,600	86	0.054	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	96	0.000		N/S 1:	0.408 *
Southbound	Through	2.00	3,200	758	0.267		N/S 2:	0.326
	Left	1.00	1,600	185	0.116	*	E/W 1:	0.389 *
	Right	1.00	1,600	181	0.055		E/W 2:	0.270
Westbound	Through	2.00	3,200	649	0.203			
	Left	1.00	1,600	146	0.091	*	V/C Ratio:	0.797
	Right	0.00	0	100	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	833	0.292	*	ITS:	0.000
	Left	1.00	1,600	94	0.059			
	Right	1.00	1,600	98	0.032		ICU:	0.897
Eastbound	Through	2.00	3,200	954	0.298	*		
	Left	1.00	1,600	107	0.067		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	142	0.000		N/S 1:	0.217
Southbound	Through	2.00	3,200	636	0.243	*	N/S 2:	0.276 *
	Left	1.00	1,600	91	0.057		E/W 1:	0.254
	Right	0.00	0	77	0.000		E/W 2:	0.340 *
Westbound	Through	2.00	3,200	833	0.284	*		
	Left	1.00	1,600	118	0.074		V/C Ratio:	0.616
	Right	0.00	0	37	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	476	0.160		ITS:	0.000
	Left	1.00	1,600	52	0.033	*		
	Right	0.00	0	82	0.000		ICU:	0.716
Eastbound	Through	2.00	3,200	493	0.180			
	Left	1.00	1,600	90	0.056	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	119	0.000		N/S 1:	0.326 *
Southbound	Through	2.00	3,200	679	0.249		N/S 2:	0.298
	Left	1.00	1,600	101	0.063	*	E/W 1:	0.495 *
	Right	0.00	0	99	0.000		E/W 2:	0.322
Westbound	Through	2.00	3,200	660	0.237			
	Left	1.00	1,600	83	0.052	*	V/C Ratio:	0.821
	Right	0.00	0	42	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	798	0.263	*	ITS:	0.000
	Left	1.00	1,600	78	0.049			
	Right	0.00	0	119	0.000		ICU:	0.921
Eastbound	Through	2.00	3,200	1,298	0.443	*		
	Left	1.00	1,600	136	0.085		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	71	0.000	N/S 1:	0.273
Southbound	Through	2.00	3,200	1,211	0.401 *	N/S 2:	0.458 *
	Left	1.00	1,600	66	0.041	E/W 1:	0.267
	Right	0.00	0	111	0.000	E/W 2:	0.332 *
Westbound	Through	2.00	3,200	782	0.279 *		
	Left	1.00	1,600	157	0.098	V/C Ratio:	0.790
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	705	0.232	ITS:	0.000
	Left	1.00	1,600	91	0.057 *		
	Right	0.00	0	140	0.000	ICU:	0.890
Eastbound	Through	2.00	3,200	402	0.169		
	Left	1.00	1,600	84	0.053 *	LOS:	D

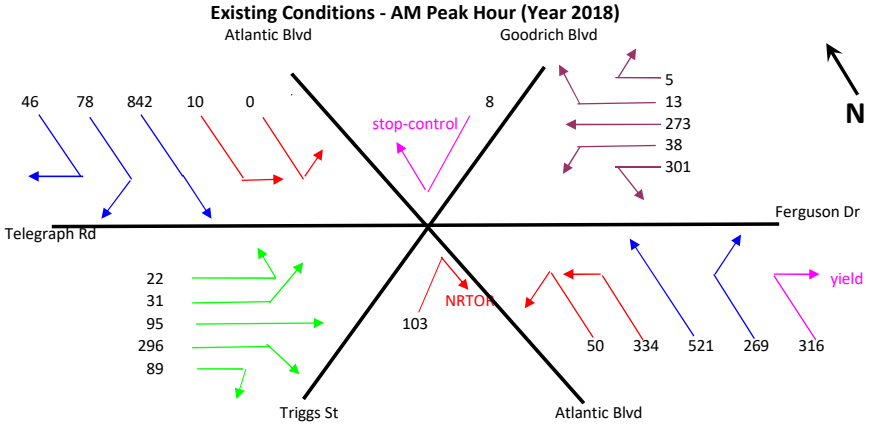
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	30	0.000	N/S 1:	0.429 *
Southbound	Through	2.00	3,200	1,154	0.370	N/S 2:	0.419
	Left	1.00	1,600	62	0.039 *	E/W 1:	0.457 *
	Right	0.00	0	70	0.000	E/W 2:	0.272
Westbound	Through	2.00	3,200	466	0.168		
	Left	1.00	1,600	67	0.042 *	V/C Ratio:	0.886
	Right	0.00	0	79	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,169	0.390 *	ITS:	0.000
	Left	1.00	1,600	79	0.049		
	Right	0.00	0	212	0.000	ICU:	0.986
Eastbound	Through	2.00	3,200	1,117	0.415 *		
	Left	1.00	1,600	166	0.104	LOS:	E

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing Conditions - AM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{50 + 334}{2} = 192$ or

Southbound Left: $\frac{10 + 0}{1} = 10$ or

Northbound Right: 103

Critical Volume #1 (CV1): **192**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{521 + 269}{3} = 263$ or

Southbound Through + Right $\frac{842 + 78 + 46}{3} = 322$

Critical Volume #2 (CV2): **322**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{301 + 38}{1} = 339$ or

Westbound Through + Right: $\frac{273 + 13 + 5}{2} = 146$ or

Westbound Right: 13 + 5 = 18

Critical Volume #3 (CV3): **339**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{22 + 31 + 95}{1} = 148$ or

Eastbound Through: $\frac{296}{3} = 98.67$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **148**

Critical Volume: 192 + 322 + 339 + 148 = **1,001**

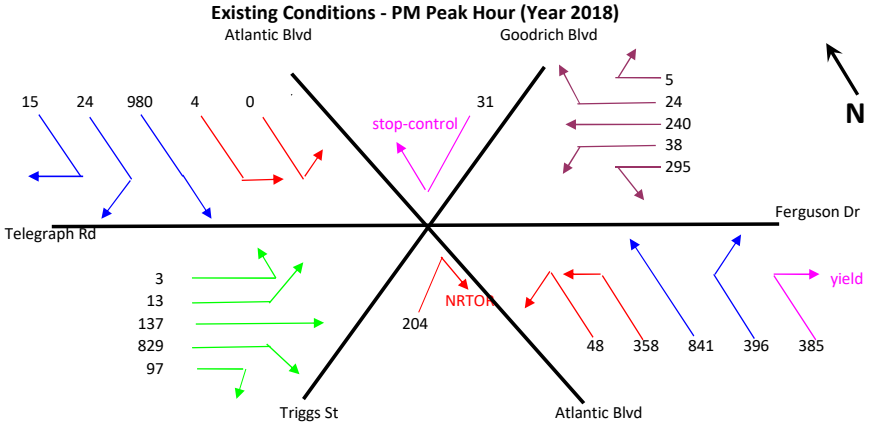
Intersection V/C: $\frac{1{,}001}{1{,}375} =$ **0.728**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.728** **Intersection LOS:** **C**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing Conditions - PM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{48 + 358}{2} = 203$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 204

Critical Volume #1 (CV1): **204**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{841 + 396}{3} = 412$ or

Southbound Through + Right $\frac{980 + 24 + 15}{3} = 340$

Critical Volume #2 (CV2): **412**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{295 + 38}{1} = 333$ or

Westbound Through + Right: $\frac{240 + 24 + 5}{2} = 135$ or

Westbound Right: 24 + 5 = 29

Critical Volume #3 (CV3): **333**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 13 + 137}{1} = 153$ or

Eastbound Through: $\frac{829}{3} = 276.3$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **276**

Critical Volume: 204 + 412 + 333 + 276 = **1,226**

Intersection V/C: $\frac{1,226}{1,375} =$ **0.891**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.891** **Intersection LOS:** **D**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	238	0.000	N/S 1:	0.360
Southbound	Through	2.00	3,200	1,194	0.448 *	N/S 2:	0.467 *
	Left	1.00	1,600	200	0.125	E/W 1:	0.090
	Right	0.00	1,600	231	0.144 *	E/W 2:	0.182 *
Westbound	Through	2.00	1,600	116	0.109		
	Left	0.00	1,600	59	0.037	V/C Ratio:	0.649
	Right	0.00	0	69	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	683	0.235	ITS:	0.000
	Left	1.00	1,600	31	0.019 *		
	Right	0.00	0	8	0.000	ICU:	0.749
Eastbound	Through	2.00	1,600	16	0.053		
	Left	0.00	1,600	60	0.038 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	198	0.000	N/S 1:	0.467 *
Southbound	Through	2.00	3,200	1,264	0.457	N/S 2:	0.462
	Left	1.00	1,600	144	0.090 *	E/W 1:	0.317 *
	Right	0.00	1,600	154	0.096	E/W 2:	0.262
Westbound	Through	2.00	1,600	27	0.048		
	Left	0.00	1,600	49	0.031 *	V/C Ratio:	0.784
	Right	0.00	0	39	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,168	0.377 *	ITS:	0.000
	Left	1.00	1,600	8	0.005		
	Right	0.00	0	27	0.000	ICU:	0.884
Eastbound	Through	2.00	1,600	165	0.286 *		
	Left	0.00	1,600	266	0.166	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.203
Southbound	Through	3.00	4,800	1,317	0.277 *	N/S 2:	0.326 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.021 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.347
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	974	0.203	ITS:	0.000
	Left	1.00	1,600	79	0.049 *		
	Right	0.00	0	34	0.000	ICU:	0.447
Eastbound	Through	1.00	1,600	0	0.021 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.267 *
Southbound	Through	3.00	4,800	1,169	0.245	N/S 2:	0.257
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.044 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.311
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,280	0.267 *	ITS:	0.000
	Left	1.00	1,600	19	0.012		
	Right	0.00	0	70	0.000	ICU:	0.411
Eastbound	Through	1.00	1,600	0	0.044 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	277	0.056	N/S 1:	0.277 *
Southbound	Through	2.00	3,200	762	0.238	N/S 2:	0.263
	Left	1.00	1,600	189	0.118 *	E/W 1:	0.155
	Right	0.00	0	160	0.000	E/W 2:	0.370 *
Westbound	Through	3.00	4,800	1,054	0.253 *		
	Left	1.00	1,600	51	0.032	V/C Ratio:	0.647
	Right	0.00	0	15	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	493	0.159 *	ITS:	0.000
	Left	1.00	1,600	40	0.025		
	Right	0.00	0	33	0.000	ICU:	0.747
Eastbound	Through	3.00	4,800	558	0.123		
	Left	1.00	1,600	187	0.117 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	284	0.042	N/S 1:	0.451 *
Southbound	Through	2.00	3,200	745	0.233	N/S 2:	0.249
	Left	1.00	1,600	301	0.188 *	E/W 1:	0.242
	Right	0.00	0	190	0.000	E/W 2:	0.318 *
Westbound	Through	3.00	4,800	683	0.182 *		
	Left	1.00	1,600	46	0.029	V/C Ratio:	0.769
	Right	0.00	0	59	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	781	0.263 *	ITS:	0.000
	Left	1.00	1,600	26	0.016		
	Right	0.00	0	36	0.000	ICU:	0.869
Eastbound	Through	3.00	4,800	986	0.213		
	Left	1.00	1,600	217	0.136 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.372 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.225 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	416	0.130 *		
	Left	1.00	1,600	197	0.123	V/C Ratio:	0.597
	Right	0.99	1,579	528	0.273	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.01	2,899	1,077	0.372 *		
	Right	3.00	4,800	1,201	0.000	ICU:	0.697
Eastbound	Through	2.00	3,200	304	0.095 *		
	Left	0.00	0	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.405 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.443 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	734	0.229		
	Left	1.00	1,600	451	0.282 *	V/C Ratio:	0.848
	Right	0.79	1,269	462	0.223	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.21	3,178	1,286	0.405 *		
	Right	3.00	4,800	1,848	0.000	ICU:	0.948
Eastbound	Through	2.00	3,200	516	0.161 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	61	0.000	N/S 1:	0.123 *
Southbound	Through	1.00	1,600	57	0.040 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.242
	Right	0.00	0	8	0.000	E/W 2:	0.281 *
Westbound	Through	2.00	3,200	345	0.110 *		
	Left	2.00	2,880	224	0.078	V/C Ratio:	0.404
	Right	0.00	0	10	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	15	0.008	ITS:	0.000
	Left	1.79	2,580	215	0.083 *		
	Right	0.00	0	60	0.000	ICU:	0.504
Eastbound	Through	2.00	3,200	466	0.164		
	Left	1.00	1,600	274	0.171 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	299	0.138	N/S 1:	0.242 *
Southbound	Through	1.00	1,600	224	0.153 *	N/S 2:	0.000
	Left	0.00	1,600	21	0.013	E/W 1:	0.369 *
	Right	0.00	0	7	0.000	E/W 2:	0.297
Westbound	Through	2.00	3,200	630	0.199		
	Left	2.00	2,880	296	0.103 *	V/C Ratio:	0.611
	Right	0.00	1,600	26	0.016	Loss Time:	0.100
Northbound	Through	2.00	1,600	10	0.006	ITS:	0.000
	Left	1.72	2,473	219	0.089 *		
	Right	0.00	0	101	0.000	ICU:	0.711
Eastbound	Through	2.00	3,200	750	0.266 *		
	Left	1.00	1,600	156	0.098	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	50	0.000	N/S 1:	0.011 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	18	0.011 *	E/W 1:	0.078
	Right	1.00	1,600	49	0.019	E/W 2:	0.179 *
Westbound	Through	3.00	4,800	620	0.129 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.190
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.290
Eastbound	Through	2.00	3,200	248	0.078		
	Left	2.00	2,880	145	0.050 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	320	0.050	N/S 1:	0.066 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.050
	Left	1.00	1,600	106	0.066 *	E/W 1:	0.151
	Right	1.00	1,600	141	0.022	E/W 2:	0.202 *
Westbound	Through	3.00	4,800	487	0.101 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.268
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.368
Eastbound	Through	2.00	3,200	482	0.151		
	Left	2.00	2,880	290	0.101 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	15	0.000	N/S 1:	0.014 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	22	0.014 *	E/W 1:	0.043
	Right	0.00	0	91	0.000	E/W 2:	0.187 *
Westbound	Through	3.00	4,800	656	0.156 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.201
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.301
Eastbound	Through	3.00	4,800	207	0.043		
	Left	1.00	1,600	50	0.031 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	98	0.055	N/S 1:	0.108 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.055
	Left	1.00	1,600	173	0.108 *	E/W 1:	0.121
	Right	0.00	0	60	0.000	E/W 2:	0.133 *
Westbound	Through	3.00	4,800	516	0.120 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.241
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.341
Eastbound	Through	3.00	4,800	583	0.121		
	Left	1.00	1,600	20	0.013 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.48	769	37	0.030	N/S 1:	0.053 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.030
	Left	1.52	2,188	117	0.053 *	E/W 1:	0.040
	Right	0.00	0	174	0.000	E/W 2:	0.224 *
Westbound	Through	3.00	4,800	723	0.188 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.277
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.377
Eastbound	Through	3.00	4,800	180	0.038		
	Left	1.00	1,600	58	0.036 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.42	679	74	0.083	N/S 1:	0.121 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.083
	Left	1.58	2,269	275	0.121 *	E/W 1:	0.151
	Right	0.00	0	114	0.000	E/W 2:	0.181 *
Westbound	Through	3.00	4,800	509	0.130 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.302
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.402
Eastbound	Through	3.00	4,800	723	0.151		
	Left	1.00	1,600	82	0.051 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	11	0.000	N/S 1:	0.121 *
Southbound	Through	1.00	1,600	14	0.016 *	N/S 2:	0.000
	Left	1.00	1,600	17	0.011	E/W 1:	0.375 *
	Right	0.00	0	9	0.000	E/W 2:	0.153
Westbound	Through	3.00	4,800	726	0.153		
	Left	1.00	1,600	503	0.314 *	V/C Ratio:	0.496
	Right	1.00	1,600	304	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.105 *	ITS:	0.000
	Left	0.00	1,600	163	0.102		
	Right	0.00	0	33	0.000	ICU:	0.596
Eastbound	Through	3.00	4,800	260	0.061 *		
	Left	1.00	1,600	0	0.000	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	17	0.000	N/S 1:	0.126 *
Southbound	Through	1.00	1,600	74	0.057 *	N/S 2:	0.000
	Left	1.00	1,600	32	0.020	E/W 1:	0.560 *
	Right	0.00	0	52	0.000	E/W 2:	0.135
Westbound	Through	3.00	4,800	496	0.114		
	Left	1.00	1,600	602	0.376 *	V/C Ratio:	0.686
	Right	1.00	1,600	215	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	12	0.069 *	ITS:	0.000
	Left	0.00	1,600	99	0.062		
	Right	0.00	0	51	0.000	ICU:	0.786
Eastbound	Through	3.00	4,800	830	0.184 *		
	Left	1.00	1,600	34	0.021	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	518	0.270	N/S 1:	0.356 *
Southbound	Through	2.00	3,200	682	0.213	N/S 2:	0.312
	Left	1.00	1,600	14	0.009 *	E/W 1:	0.190
	Right	0.00	0	40	0.000	E/W 2:	0.231 *
Westbound	Through	2.00	3,200	526	0.177 *		
	Left	1.00	1,600	248	0.155	V/C Ratio:	0.587
	Right	0.00	0	148	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	963	0.347 *	ITS:	0.000
	Left	2.00	2,880	120	0.042		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.687
Eastbound	Through	2.00	3,200	111	0.035		
	Left	2.00	2,880	156	0.054 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	538	0.227	N/S 1:	0.416 *
Southbound	Through	2.00	3,200	591	0.185	N/S 2:	0.274
	Left	1.00	1,600	45	0.028 *	E/W 1:	0.262 *
	Right	0.00	0	39	0.000	E/W 2:	0.262
Westbound	Through	2.00	3,200	449	0.153 *		
	Left	1.00	1,600	196	0.123 *	V/C Ratio:	0.678
	Right	0.00	0	249	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	991	0.388 *	ITS:	0.000
	Left	2.00	2,880	136	0.047		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.778
Eastbound	Through	2.00	3,200	446	0.139 *		
	Left	2.00	2,880	315	0.109 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	70	0.037	N/S 1:	0.355
Southbound	Through	2.00	3,200	1,159	0.362 *	N/S 2:	0.366 *
	Left	1.00	1,600	75	0.047	E/W 1:	0.272 *
	Right	1.00	1,600	212	0.109	E/W 2:	0.206
Westbound	Through	2.00	3,200	613	0.192		
	Left	2.00	2,880	593	0.206 *	V/C Ratio:	0.638
	Right	1.00	1,600	431	0.063	Loss Time:	0.100
Northbound	Through	2.00	3,200	978	0.308	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	105	0.066 *	ICU:	0.738
Eastbound	Through	2.00	3,200	155	0.048		
	Left	1.00	1,600	23	0.014	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	61	0.027	N/S 1:	0.319 *
Southbound	Through	2.00	3,200	1,003	0.313	N/S 2:	0.315
	Left	1.00	1,600	104	0.065 *	E/W 1:	0.304 *
	Right	1.00	1,600	335	0.177	E/W 2:	0.199
Westbound	Through	2.00	3,200	296	0.093		
	Left	2.00	2,880	316	0.110 *	V/C Ratio:	0.623
	Right	1.00	1,600	405	0.143	Loss Time:	0.100
Northbound	Through	2.00	3,200	811	0.254 *	ITS:	0.000
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	220	0.138	ICU:	0.723
Eastbound	Through	2.00	3,200	620	0.194 *		
	Left	1.00	1,600	35	0.022	LOS:	C

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.035
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.212 *
	Left	0.00	0	0	0.000	E/W 1:	0.511 *
	Right	0.00	0	0	0.000	E/W 2:	0.284
Westbound	Through	2.00	3,200	909	0.284		
	Left	1.00	1,600	500	0.313 *	V/C Ratio:	0.723
	Right	0.03	47	9	0.035	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.97	2,838	602	0.212 *		
	Right	0.00	0	161	0.000	ICU:	0.823
Eastbound	Through	2.00	3,200	474	0.198 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.014
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.166 *
	Left	0.00	0	0	0.000	E/W 1:	0.611 *
	Right	0.00	0	0	0.000	E/W 2:	0.161
Westbound	Through	2.00	3,200	514	0.161		
	Left	1.00	1,600	434	0.271 *	V/C Ratio:	0.777
	Right	0.12	187	28	0.014	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.88	2,712	451	0.166 *		
	Right	0.00	0	241	0.000	ICU:	0.877
Eastbound	Through	2.00	3,200	846	0.340 *		
	Left	0.00	0	0	0.000	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.350
Southbound	Through	1.00	1,600	821	0.513 *	N/S 2:	0.513 *
	Left	2.00	2,880	605	0.210	E/W 1:	0.000
	Right	3.00	4,800	947	0.092 *	E/W 2:	0.092 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.605
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	670	0.140	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.705
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.525
Southbound	Through	1.00	1,600	1,364	0.853 *	N/S 2:	0.853 *
	Left	2.00	2,880	976	0.339	E/W 1:	0.000
	Right	3.00	4,800	818	0.001 *	E/W 2:	0.001 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.854
	Right	0.00	0	5	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	890	0.186	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.954
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	11	0.000		N/S 1:	0.178	*
Southbound	Through	2.00	3,200	412	0.132		N/S 2:	0.133	
	Left	2.00	2,880	183	0.064	*	E/W 1:	0.173	*
	Right	1.96	3,136	443	0.109		E/W 2:	0.000	
Westbound	Through	0.04	64	9	0.141				
	Left	1.00	1,600	246	0.154	*	V/C Ratio:	0.351	
	Right	0.00	0	34	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	512	0.114	*	ITS:	0.000	
	Left	1.00	1,600	1	0.001				
	Right	0.00	0	0	0.000		ICU:	0.451	
Eastbound	Through	2.00	3,200	57	0.019	*			
	Left	0.00	1,600	3	0.002		LOS:	A	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	18	0.000		N/S 1:	0.230	
Southbound	Through	2.00	3,200	723	0.232	*	N/S 2:	0.233	*
	Left	2.00	2,880	248	0.086		E/W 1:	0.080	*
	Right	1.85	2,965	164	0.012		E/W 2:	0.000	
Westbound	Through	0.15	235	13	0.055				
	Left	1.00	1,600	98	0.061	*	V/C Ratio:	0.313	
	Right	0.00	0	35	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	654	0.144		ITS:	0.000	
	Left	1.00	1,600	1	0.001	*			
	Right	0.00	0	14	0.000		ICU:	0.413	
Eastbound	Through	2.00	3,200	29	0.019	*			
	Left	0.00	1,600	17	0.011		LOS:	A	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	145	0.067	N/S 1:	0.123
Southbound	Through	2.00	3,200	582	0.182 *	N/S 2:	0.211 *
	Left	1.00	1,600	13	0.008	E/W 1:	0.133
	Right	0.00	0	22	0.000	E/W 2:	0.158 *
Westbound	Through	3.00	4,800	506	0.110 *		
	Left	1.00	1,600	38	0.024	V/C Ratio:	0.369
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	523	0.115	ITS:	0.000
	Left	1.00	1,600	47	0.029 *		
	Right	0.00	0	72	0.000	ICU:	0.469
Eastbound	Through	3.00	4,800	452	0.109		
	Left	1.00	1,600	77	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	172	0.082	N/S 1:	0.149
Southbound	Through	2.00	3,200	976	0.305 *	N/S 2:	0.361 *
	Left	1.00	1,600	10	0.006	E/W 1:	0.157
	Right	0.00	0	40	0.000	E/W 2:	0.222 *
Westbound	Through	3.00	4,800	780	0.171 *		
	Left	1.00	1,600	54	0.034	V/C Ratio:	0.583
	Right	0.00	0	21	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	665	0.143	ITS:	0.000
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	58	0.000	ICU:	0.683
Eastbound	Through	3.00	4,800	534	0.123		
	Left	1.00	1,600	82	0.051 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	22	0.000	N/S 1:	0.111
Southbound	Through	3.00	4,800	481	0.105 *	N/S 2:	0.148 *
	Left	1.00	1,600	39	0.024	E/W 1:	0.100
	Right	0.00	0	21	0.000	E/W 2:	0.134 *
Westbound	Through	3.00	4,800	564	0.122 *		
	Left	1.00	1,600	35	0.022	V/C Ratio:	0.282
	Right	0.00	0	15	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	403	0.087	ITS:	0.000
	Left	1.00	1,600	68	0.043 *		
	Right	0.00	0	71	0.000	ICU:	0.382
Eastbound	Through	3.00	4,800	304	0.078		
	Left	1.00	1,600	19	0.012 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	31	0.000	N/S 1:	0.166
Southbound	Through	3.00	4,800	562	0.124 *	N/S 2:	0.180 *
	Left	1.00	1,600	55	0.034	E/W 1:	0.165 *
	Right	0.00	0	32	0.000	E/W 2:	0.158
Westbound	Through	3.00	4,800	616	0.135		
	Left	1.00	1,600	27	0.017 *	V/C Ratio:	0.345
	Right	0.00	0	26	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	608	0.132	ITS:	0.000
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	78	0.000	ICU:	0.445
Eastbound	Through	3.00	4,800	633	0.148 *		
	Left	1.00	1,600	36	0.023	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.239 *
Southbound	Through	3.00	4,800	1,139	0.237	N/S 2:	0.237
	Left	1.00	1,600	84	0.053 *	E/W 1:	0.068
	Right	0.00	0	0	0.000	E/W 2:	0.223 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.462
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	594	0.186 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	108	0.068	ICU:	0.562
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	643	0.223 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.500 *
Southbound	Through	3.00	4,800	936	0.195	N/S 2:	0.195
	Left	1.00	1,600	210	0.131 *	E/W 1:	0.017
	Right	0.00	0	0	0.000	E/W 2:	0.078 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.578
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,180	0.369 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	27	0.017	ICU:	0.678
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	225	0.078 *	LOS:	B

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	793	0.132	N/S 1:	0.236 *
Southbound	Through	3.00	4,800	652	0.136	N/S 2:	0.188
	Left	1.00	1,600	56	0.035 *	E/W 1:	0.315 *
	Right	2.00	3,200	250	0.061	E/W 2:	0.000
Westbound	Through	1.00	1,600	259	0.162 *		
	Left	1.00	1,600	146	0.091	V/C Ratio:	0.551
	Right	0.00	0	306	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,298	0.201 *	ITS:	0.000
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	122	0.000	ICU:	0.651
Eastbound	Through	3.00	4,800	610	0.153 *		
	Left	1.00	1,600	185	0.116	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.01	1,618	302	0.000	N/S 1:	0.201
Southbound	Through	3.99	6,382	1,191	0.187 *	N/S 2:	0.215 *
	Left	1.00	1,600	33	0.021	E/W 1:	0.449 *
	Right	2.00	3,200	475	0.138	E/W 2:	0.000
Westbound	Through	1.00	1,600	172	0.108		
	Left	1.00	1,600	292	0.183 *	V/C Ratio:	0.664
	Right	0.00	0	221	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,222	0.180	ITS:	0.000
	Left	1.00	1,600	45	0.028 *		
	Right	0.00	1,600	425	0.266 *	ICU:	0.764
Eastbound	Through	2.57	2,506	533	0.213		
	Left	1.43	2,065	488	0.236	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	738	0.364	N/S 1:	0.472 *
Southbound	Through	2.00	3,200	829	0.259	N/S 2:	0.411
	Left	1.00	1,600	278	0.174 *	E/W 1:	0.188
	Right	1.00	1,600	364	0.141 *	E/W 2:	0.239 *
Westbound	Through	2.00	3,200	185	0.058		
	Left	1.00	1,600	181	0.113	V/C Ratio:	0.711
	Right	1.00	1,600	98	0.005	Loss Time:	0.100
Northbound	Through	2.00	3,200	952	0.298 *	ITS:	0.000
	Left	1.00	1,600	75	0.047		
	Right	0.00	0	29	0.000	ICU:	0.811
Eastbound	Through	2.00	3,200	210	0.075		
	Left	1.00	1,600	156	0.098 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	297	0.046	N/S 1:	0.427 *
Southbound	Through	2.00	3,200	1,077	0.337	N/S 2:	0.364
	Left	1.00	1,600	249	0.156 *	E/W 1:	0.330 *
	Right	1.00	1,600	150	0.016	E/W 2:	0.155
Westbound	Through	2.00	3,200	43	0.013		
	Left	1.00	1,600	56	0.035 *	V/C Ratio:	0.757
	Right	1.00	1,600	180	0.095	Loss Time:	0.100
Northbound	Through	2.00	3,200	868	0.271 *	ITS:	0.000
	Left	1.00	1,600	43	0.027		
	Right	0.00	0	98	0.000	ICU:	0.857
Eastbound	Through	2.00	3,200	845	0.295 *		
	Left	1.00	1,600	223	0.139	LOS:	D

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	4	3	201	14	2	133
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	3	201	14	2	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	50	4	1	33
Total Analysis Volume [veh/h]	4	3	201	14	2	133
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.58	9.37	0.00	0.00	7.66	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.74	0.74	0.00	0.00	0.11	0.00
d_A, Approach Delay [s/veh]	10.06		0.00		0.11	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.24					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	3	16	179	16	49	137
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]	3	16	179	16	49	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	4	45	4	12	34
Total Analysis Volume [veh/h]	3	16	179	16	49	137
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	11.46	9.32	0.00	0.00	7.71	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.00	0.00	0.11	0.00
95th-Percentile Queue Length [ft]	1.84	1.84	0.00	0.00	2.76	0.00
d_A, Approach Delay [s/veh]	9.66		0.00		2.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.40					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	77	141	81	139	48	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	141	81	139	48	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	35	20	35	12	15
Total Analysis Volume [veh/h]	77	141	81	139	48	60
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.09	0.07
d_M, Delay for Movement [s/veh]	7.83	0.00	0.00	0.00	12.70	9.99
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.58	0.58	0.00	0.00	0.55	0.55
95th-Percentile Queue Length [ft]	14.39	14.39	0.00	0.00	13.83	13.83
d_A, Approach Delay [s/veh]	2.77		0.00		11.19	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.32					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	2	9	109	400	615	44
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]	2	9	109	400	615	44
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	27	100	154	11
Total Analysis Volume [veh/h]	2	9	109	400	615	44
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.12	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	23.06	10.41	9.41	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.07	0.07	0.40	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	1.76	1.76	9.98	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.71		2.02		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.99					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	4,711.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	10.680

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	0	0	0	32	128	121	0	21	0	0	0
Total Analysis Volume [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	10.68	0.01	0.00	0.00	0.79	0.47	0.30	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	4711.58	4562.27	0.00	0.00	80.82	11.23	8.15	0.00	0.00	7.38	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	28.80	28.80	0.00	0.00	5.06	2.57	1.26	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	720.04	720.04	0.00	0.00	126.60	64.23	31.40	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	4710.93			25.01			6.94			2.46		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	764.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	87	2	0	26	1	0
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]	87	2	0	26	1	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	1	0	7	0	0
Total Analysis Volume [veh/h]	87	2	0	26	1	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	9.08	8.71
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.09	0.09
d_A, Approach Delay [s/veh]	0.00		0.00		9.08	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.106

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	53	21	150	65	22	302
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]	53	21	150	65	22	302
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	5	38	16	6	76
Total Analysis Volume [veh/h]	53	21	150	65	22	302
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.02	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	13.11	10.13	0.00	0.00	7.70	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.44	0.44	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft]	11.12	11.12	0.00	0.00	1.24	0.00
d_A, Approach Delay [s/veh]	12.26		0.00		0.52	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	61	106	148	19	39	249
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	106	148	19	39	249
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	27	37	5	10	62
Total Analysis Volume [veh/h]	61	106	148	19	39	249
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	13.39	10.61	0.00	0.00	7.62	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.91	0.91	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft]	22.77	22.77	0.00	0.00	2.13	0.00
d_A, Approach Delay [s/veh]	11.62		0.00		1.03	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.60					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	43	120	132	93	166	142
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]	43	120	132	93	166	142
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	30	33	23	42	36
Total Analysis Volume [veh/h]	43	120	132	93	166	142
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.28	0.16
d_M, Delay for Movement [s/veh]	7.77	0.00	0.00	0.00	15.06	13.20
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.41	0.41	0.00	0.00	2.27	2.27
95th-Percentile Queue Length [ft]	10.33	10.33	0.00	0.00	56.81	56.81
d_A, Approach Delay [s/veh]	2.05		0.00		14.20	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	6.77					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	40.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.290

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	39	65	94	748	743	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	65	94	748	743	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	16	24	187	186	7
Total Analysis Volume [veh/h]	39	65	94	748	743	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.29	0.10	0.11	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	40.29	19.32	9.83	0.00	0.00	0.00
Movement LOS	E	C	A	A	A	A
95th-Percentile Queue Length [veh]	1.79	1.79	0.38	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	44.66	44.66	9.42	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	27.18		1.10		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.18					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	1	0	0	8	17	229	0	89	0	0	0
Total Analysis Volume [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.15	0.00	0.00	1.67	0.06	0.56	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	738.92	8.54	10.06	0.00	0.00	8.00	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	23.92	23.92	0.00	0.00	4.44	0.20	3.74	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	597.89	597.89	0.00	0.00	111.08	5.09	93.45	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			244.84			7.24			2.67		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1121.73											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	137	8	4	46	4	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	8	4	46	4	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	2	1	12	1	1
Total Analysis Volume [veh/h]	137	8	4	46	4	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.51	0.00	9.59	9.01
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.11	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	2.70	2.70	0.80	0.80
d_A, Approach Delay [s/veh]	0.00		0.60		9.27	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.56					
Intersection LOS	A					

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Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	164	0.000		N/S 1:	0.380	*
Southbound	Through	2.00	3,200	690	0.267		N/S 2:	0.343	
	Left	1.00	1,600	289	0.181	*	E/W 1:	0.332	*
	Right	1.00	1,600	226	0.051		E/W 2:	0.313	
Westbound	Through	2.00	3,200	718	0.224				
	Left	1.00	1,600	164	0.103	*	V/C Ratio:	0.712	
	Right	0.00	0	123	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	515	0.199	*	ITS:	0.000	
	Left	1.00	1,600	122	0.076				
	Right	1.00	1,600	108	0.029		ICU:	0.812	
Eastbound	Through	2.00	3,200	733	0.229	*			
	Left	1.00	1,600	142	0.089		LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	184	0.000		N/S 1:	0.234
Southbound	Through	2.00	3,200	844	0.321	*	N/S 2:	0.372 *
	Left	1.00	1,600	107	0.067		E/W 1:	0.335 *
	Right	0.00	0	86	0.000		E/W 2:	0.326
Westbound	Through	2.00	3,200	644	0.228			
	Left	1.00	1,600	121	0.076	*	V/C Ratio:	0.707
	Right	0.00	0	56	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	478	0.167		ITS:	0.000
	Left	1.00	1,600	81	0.051	*		
	Right	0.00	0	132	0.000		ICU:	0.807
Eastbound	Through	2.00	3,200	697	0.259	*		
	Left	1.00	1,600	157	0.098		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

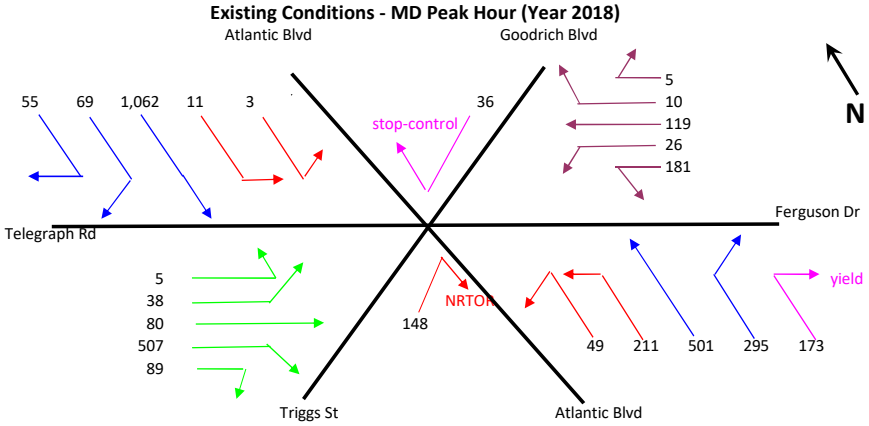
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	55	0.000		N/S 1:	0.296
Southbound	Through	2.00	3,200	782	0.262	*	N/S 2:	0.358 *
	Left	1.00	1,600	62	0.039		E/W 1:	0.253 *
	Right	0.00	0	98	0.000		E/W 2:	0.194
Westbound	Through	2.00	3,200	351	0.140			
	Left	1.00	1,600	88	0.055	*	V/C Ratio:	0.611
	Right	0.00	0	72	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	751	0.257		ITS:	0.000
	Left	1.00	1,600	154	0.096	*		
	Right	0.00	0	165	0.000		ICU:	0.711
Eastbound	Through	2.00	3,200	467	0.198	*		
	Left	1.00	1,600	87	0.054		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing Conditions - MD Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{49 + 211}{2} = 130$ or

Southbound Left: $\frac{11 + 3}{1} = 14$ or

Northbound Right: 148

Critical Volume #1 (CV1): **148**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{501 + 295}{3} = 265$ or

Southbound Through + Right $\frac{1{,}062 + 69 + 55}{3} = 395$

Critical Volume #2 (CV2): **395**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{181 + 26}{1} = 207$ or

Westbound Through + Right: $\frac{119 + 10 + 5}{2} = 67$ or

Westbound Right: 10 + 5 = 15

Critical Volume #3 (CV3): **207**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 38 + 80}{1} = 123$ or

Eastbound Through: $\frac{507}{3} = 169$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **169**

Critical Volume: 148 + 395 + 207 + 169 = **919**

Intersection V/C: $\frac{919}{1{,}375} =$ **0.668**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.668** **Intersection LOS:** **B**

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Intersection Capacity Utilization Analysis

4. Atlantic Blvd/Triggs St & Telegraph Rd/Ferguson Dr

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	1,600	55	0.034 *	N/S 1:	0.007
Southbound	Through	3.00	3,200	0	0.000	N/S 2:	0.107 *
	Left	1.00	1,600	11	0.007	E/W 1:	0.393 *
	Right	0.00	1,600	10	0.006	E/W 2:	0.000
Westbound	Through	2.00	1,600	0	0.000		
	Left	1.00	1,600	181	0.113 *	V/C Ratio:	0.500
	Right	1.00	1,600	173	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	0	0.000	ITS:	0.000
	Left	2.00	2,880	211	0.073 *		
	Right	1.00	1,600	507	0.280 *	ICU:	0.600
Eastbound	Through	3.00	4,800	80	0.017		
	Left	1.00	1,600	5	0.003	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	135	0.000		N/S 1:	0.317 *
Southbound	Through	2.00	3,200	857	0.310		N/S 2:	0.316
	Left	1.00	1,600	75	0.047	*	E/W 1:	0.091
	Right	0.00	1,600	94	0.059	*	E/W 2:	0.121 *
Westbound	Through	2.00	1,600	13	0.019			
	Left	0.00	1,600	17	0.011		V/C Ratio:	0.438
	Right	0.00	0	6	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	858	0.270	*	ITS:	0.000
	Left	1.00	1,600	9	0.006			
	Right	0.00	0	18	0.000		ICU:	0.538
Eastbound	Through	2.00	1,600	11	0.080			
	Left	0.00	1,600	99	0.062	*	LOS:	A

* Critical Movement

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Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.182
Southbound	Through	3.00	4,800	878	0.183 *	N/S 2:	0.192 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.012 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.204
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	873	0.182	ITS:	0.000
	Left	1.00	1,600	15	0.009 *		
	Right	0.00	0	19	0.000	ICU:	0.304
Eastbound	Through	1.00	1,600	0	0.012 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	222	0.018		N/S 1:	0.291 *
Southbound	Through	2.00	3,200	474	0.148		N/S 2:	0.158
	Left	1.00	1,600	210	0.131	*	E/W 1:	0.159
	Right	0.00	0	192	0.000		E/W 2:	0.289 *
Westbound	Through	3.00	4,800	612	0.168	*		
	Left	1.00	1,600	39	0.024		V/C Ratio:	0.580
	Right	0.00	0	36	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	475	0.160	*	ITS:	0.000
	Left	1.00	1,600	16	0.010			
	Right	0.00	0	23	0.000		ICU:	0.680
Eastbound	Through	3.00	4,800	627	0.135			
	Left	1.00	1,600	194	0.121	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.379 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.355 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	448	0.140		
	Left	1.00	1,600	289	0.181 *	V/C Ratio:	0.734
	Right	1.00	1,600	751	0.379 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	785	0.273		
	Right	3.00	4,800	1,387	0.016	ICU:	0.834
Eastbound	Through	2.00	3,200	558	0.174 *		
	Left	0.00	0	0	0.000	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	174	0.038		N/S 1:	0.173 *
Southbound	Through	1.00	1,600	118	0.091	*	N/S 2:	0.000
	Left	0.00	1,600	27	0.017		E/W 1:	0.440 *
	Right	0.00	0	12	0.000		E/W 2:	0.281
Westbound	Through	2.00	3,200	430	0.138			
	Left	2.00	2,880	290	0.101	*	V/C Ratio:	0.613
	Right	0.00	1,600	80	0.050		Loss Time:	0.100
Northbound	Through	2.00	1,600	8	0.005		ITS:	0.000
	Left	1.25	1,806	148	0.082	*		
	Right	0.00	0	57	0.000		ICU:	0.713
Eastbound	Through	2.00	3,200	1,027	0.339	*		
	Left	1.00	1,600	228	0.143		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.99	3,186	227	0.000	N/S 1:	0.079 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.01	1,453	115	0.079 *	E/W 1:	0.117
	Right	1.00	1,600	313	0.116 *	E/W 2:	0.318 *
Westbound	Through	3.00	4,800	544	0.113		
	Left	0.00	0	0	0.000	V/C Ratio:	0.397
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.497
Eastbound	Through	2.00	3,200	373	0.117		
	Left	2.00	2,880	581	0.202 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	223	0.126 *	N/S 1:	0.125
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.126 *
	Left	1.00	1,600	200	0.125	E/W 1:	0.089
	Right	0.00	0	122	0.000	E/W 2:	0.183 *
Westbound	Through	3.00	4,800	620	0.155 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.309
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.409
Eastbound	Through	3.00	4,800	429	0.089		
	Left	1.00	1,600	44	0.028 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.50	807	58	0.051		N/S 1:	0.080 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.051
	Left	1.50	2,154	172	0.080	*	E/W 1:	0.119
	Right	0.00	0	129	0.000		E/W 2:	0.231 *
Westbound	Through	3.00	4,800	776	0.189	*		
	Left	0.00	1,600	1	0.001		V/C Ratio:	0.311
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.411
Eastbound	Through	3.00	4,800	565	0.118			
	Left	1.00	1,600	67	0.042	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	16	0.000		N/S 1:	0.200	*
Southbound	Through	1.00	1,600	35	0.032	*	N/S 2:	0.000	
	Left	1.00	1,600	30	0.019		E/W 1:	0.465	*
	Right	0.00	0	53	0.000		E/W 2:	0.178	
Westbound	Through	3.00	4,800	701	0.157				
	Left	1.00	1,600	497	0.311	*	V/C Ratio:	0.665	
	Right	1.00	1,600	214	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	31	0.168	*	ITS:	0.000	
	Left	0.00	1,600	237	0.148				
	Right	0.00	0	61	0.000		ICU:	0.765	
Eastbound	Through	3.00	4,800	679	0.154	*			
	Left	1.00	1,600	34	0.021		LOS:	C	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	496	0.217 *	N/S 1:	0.294
Southbound	Through	2.00	3,200	364	0.114	N/S 2:	0.348 *
	Left	1.00	1,600	37	0.023	E/W 1:	0.184
	Right	0.00	0	33	0.000	E/W 2:	0.251 *
Westbound	Through	2.00	3,200	471	0.158 *		
	Left	1.00	1,600	158	0.099	V/C Ratio:	0.599
	Right	0.00	0	167	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	699	0.271	ITS:	0.000
	Left	2.00	2,880	378	0.131 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.699
Eastbound	Through	2.00	3,200	273	0.085		
	Left	2.00	2,880	268	0.093 *	LOS:	B

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	134	0.084	N/S 1:	0.157
Southbound	Through	2.00	3,200	564	0.176 *	N/S 2:	0.237 *
	Left	1.00	1,600	31	0.019	E/W 1:	0.183
	Right	1.00	1,600	330	0.206 *	E/W 2:	0.214 *
Westbound	Through	2.00	3,200	423	0.132		
	Left	2.00	2,880	269	0.093	V/C Ratio:	0.451
	Right	1.00	1,600	296	0.092	Loss Time:	0.100
Northbound	Through	2.00	3,200	441	0.138	ITS:	0.000
	Left	1.00	1,600	98	0.061 *		
	Right [1]	1.00	1,600	139	0.087	ICU:	0.551
Eastbound	Through	2.00	3,200	289	0.090		
	Left	1.00	1,600	13	0.008 *	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.050
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.144 *
	Left	0.00	0	0	0.000		E/W 1:	0.368 *
	Right	0.00	0	0	0.000		E/W 2:	0.159
Westbound	Through	2.00	3,200	509	0.159			
	Left	1.00	1,600	255	0.159	*	V/C Ratio:	0.512
	Right	0.09	147	19	0.050		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.91	2,748	396	0.144	*		
	Right	0.00	0	177	0.000		ICU:	0.612
Eastbound	Through	2.00	3,200	493	0.209	*		
	Left	0.00	0	0	0.000		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.380
Southbound	Through	1.00	1,600	978	0.611 *	N/S 2:	0.611 *
	Left	2.00	2,880	634	0.220	E/W 1:	0.000
	Right	3.00	4,800	747	0.046 *	E/W 2:	0.046 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.657
	Right	0.00	0	6	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	761	0.160	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.757
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	23	0.000		N/S 1:	0.163	*
Southbound	Through	2.00	3,200	411	0.136		N/S 2:	0.137	
	Left	2.00	2,880	244	0.085	*	E/W 1:	0.139	*
	Right	1.96	3,143	388	0.081		E/W 2:	0.000	
Westbound	Through	0.04	57	7	0.123	*			
	Left	1.00	1,600	41	0.026		V/C Ratio:	0.302	
	Right	0.00	0	36	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	337	0.078	*	ITS:	0.000	
	Left	1.00	1,600	1	0.001				
	Right	0.00	0	5	0.000		ICU:	0.402	
Eastbound	Through	2.00	3,200	40	0.016	*			
	Left	0.00	1,600	7	0.004		LOS:	A	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	188	0.081	N/S 1:	0.128
Southbound	Through	2.00	3,200	624	0.195 *	N/S 2:	0.228 *
	Left	1.00	1,600	21	0.013	E/W 1:	0.104
	Right	0.00	0	34	0.000	E/W 2:	0.162 *
Westbound	Through	3.00	4,800	387	0.088 *		
	Left	1.00	1,600	45	0.028	V/C Ratio:	0.390
	Right	0.00	0	45	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	508	0.115	ITS:	0.000
	Left	1.00	1,600	52	0.033 *		
	Right	0.00	0	49	0.000	ICU:	0.490
Eastbound	Through	3.00	4,800	317	0.076		
	Left	1.00	1,600	118	0.074 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	40	0.000		N/S 1:	0.083
Southbound	Through	3.00	4,800	320	0.075	*	N/S 2:	0.108 *
	Left	1.00	1,600	35	0.022		E/W 1:	0.099 *
	Right	0.00	0	31	0.000		E/W 2:	0.090
Westbound	Through	3.00	4,800	358	0.081			
	Left	1.00	1,600	33	0.021	*	V/C Ratio:	0.207
	Right	0.00	0	26	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	267	0.061		ITS:	0.000
	Left	1.00	1,600	52	0.033	*		
	Right	0.00	0	21	0.000		ICU:	0.307
Eastbound	Through	3.00	4,800	353	0.078	*		
	Left	1.00	1,600	14	0.009		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.324 *
Southbound	Through	3.00	4,800	613	0.128	N/S 2:	0.128
	Left	1.00	1,600	232	0.145 *	E/W 1:	0.050
	Right	0.00	0	0	0.000	E/W 2:	0.236 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.560
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	574	0.179 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	80	0.050	ICU:	0.660
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	681	0.236 *	LOS:	B

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.16	1,862	260	0.049	N/S 1:	0.213 *
Southbound	Through	3.84	6,138	857	0.140	N/S 2:	0.179
	Left	1.00	1,600	30	0.019 *	E/W 1:	0.187 *
	Right	2.00	3,200	162	0.041	E/W 2:	0.000
Westbound	Through	1.00	1,600	111	0.069 *		
	Left	1.00	1,600	97	0.061	V/C Ratio:	0.400
	Right	0.00	0	194	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,354	0.194 *	ITS:	0.000
	Left	1.00	1,600	62	0.039		
	Right	0.00	1,600	189	0.118 *	ICU:	0.500
Eastbound	Through	2.50	2,394	195	0.081		
	Left	1.50	2,166	196	0.091	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	158	0.053	N/S 1:	0.332 *
Southbound	Through	2.00	3,200	558	0.174	N/S 2:	0.227
	Left	1.00	1,600	239	0.149 *	E/W 1:	0.100 *
	Right	1.00	1,600	173	0.033	E/W 2:	0.079
Westbound	Through	2.00	3,200	36	0.011		
	Left	1.00	1,600	68	0.043 *	V/C Ratio:	0.432
	Right	1.00	1,600	23	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	585	0.183 *	ITS:	0.000
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	28	0.000	ICU:	0.532
Eastbound	Through	2.00	3,200	155	0.057 *		
	Left	1.00	1,600	74	0.046	LOS:	A

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.146

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	78	24	145	157	35	181
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]	78	24	145	157	35	181
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	6	36	39	9	45
Total Analysis Volume [veh/h]	78	24	145	157	35	181
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.03	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	13.06	10.73	0.00	0.00	7.94	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.63	0.63	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft]	15.81	15.81	0.00	0.00	2.14	0.00
d_A, Approach Delay [s/veh]	12.52		0.00		1.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.188

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	115	85	98	62	67	92
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]	115	85	98	62	67	92
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	21	25	16	17	23
Total Analysis Volume [veh/h]	115	85	98	62	67	92
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.09	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	12.82	10.86	0.00	0.00	7.66	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.15	1.15	0.00	0.00	0.15	0.00
95th-Percentile Queue Length [ft]	28.66	28.66	0.00	0.00	3.71	0.00
d_A, Approach Delay [s/veh]	11.99		0.00		3.23	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.61					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	40	66	109	59	61	99
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]	40	66	109	59	61	99
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	17	27	15	15	25
Total Analysis Volume [veh/h]	40	66	109	59	61	99
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.09	0.11
d_M, Delay for Movement [s/veh]	7.63	0.00	0.00	0.00	11.35	10.05
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.24	0.24	0.00	0.00	0.73	0.73
95th-Percentile Queue Length [ft]	6.09	6.09	0.00	0.00	18.34	18.34
d_A, Approach Delay [s/veh]	2.88		0.00		10.55	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.59					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	60.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.206

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	15	64	225	942	665	84
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]	15	64	225	942	665	84
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	16	56	236	166	21
Total Analysis Volume [veh/h]	15	64	225	942	665	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.10	0.26	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	60.25	16.29	10.70	0.00	0.00	0.00
Movement LOS	F	C	B	A	A	A
95th-Percentile Queue Length [veh]	1.23	1.23	1.06	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	30.83	30.83	26.40	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	24.64		2.06		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.18					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	45.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.560

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	108	0	0	0	80	161	305	0	136	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	0	0	80	161	305	0	136	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	0	0	0	20	40	76	0	34	0	0	0
Total Analysis Volume [veh/h]	108	0	0	0	80	161	305	0	136	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.56	0.00	0.00	0.00	0.29	0.15	0.19	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	45.16	37.31	0.00	0.00	23.13	8.90	7.73	0.00	0.00	7.49	0.00	0.00
Movement LOS	E	E			C	A	A		A	A	A	A
95th-Percentile Queue Length [veh]	2.98	2.98	0.00	0.00	1.16	0.52	0.69	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	74.59	74.59	0.00	0.00	29.00	13.01	17.28	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	45.16			13.62			5.35			2.50		
Approach LOS	E			B			A			A		
d_I, Intersection Delay [s/veh]	13.31											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	268	13	2	44	9	3
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]	268	13	2	44	9	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	3	1	11	2	1
Total Analysis Volume [veh/h]	268	13	2	44	9	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.81	0.00	10.46	9.80
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.11	0.05	0.05
95th-Percentile Queue Length [ft]	0.00	0.00	2.79	2.79	1.32	1.32
d_A, Approach Delay [s/veh]	0.00		0.34		10.30	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	B					

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	109	0.000	N/S 1:	0.295 *
Southbound	Through	2.00	3,200	667	0.243	N/S 2:	0.284
	Left	1.00	1,600	158	0.099 *	E/W 1:	0.231
	Right	1.00	1,600	105	0.016	E/W 2:	0.330 *
Westbound	Through	2.00	3,200	883	0.276 *		
	Left	1.00	1,600	136	0.085	V/C Ratio:	0.625
	Right	0.00	0	59	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	568	0.196 *	ITS:	0.000
	Left	1.00	1,600	65	0.041		
	Right	1.00	1,600	79	0.029	ICU:	0.725
Eastbound	Through	2.00	3,200	466	0.146		
	Left	1.00	1,600	86	0.054 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	96	0.000	N/S 1:	0.412 *
Southbound	Through	2.00	3,200	772	0.271	N/S 2:	0.334
	Left	1.00	1,600	185	0.116 *	E/W 1:	0.390 *
	Right	1.00	1,600	181	0.055	E/W 2:	0.271
Westbound	Through	2.00	3,200	652	0.204		
	Left	1.00	1,600	146	0.091 *	V/C Ratio:	0.802
	Right	0.00	0	100	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	848	0.296 *	ITS:	0.000
	Left	1.00	1,600	101	0.063		
	Right	1.00	1,600	104	0.033	ICU:	0.902
Eastbound	Through	2.00	3,200	956	0.299 *		
	Left	1.00	1,600	107	0.067	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	142	0.000	N/S 1:	0.219
Southbound	Through	2.00	3,200	645	0.246 *	N/S 2:	0.279 *
	Left	1.00	1,600	91	0.057	E/W 1:	0.257
	Right	0.00	0	77	0.000	E/W 2:	0.341 *
Westbound	Through	2.00	3,200	834	0.285 *		
	Left	1.00	1,600	122	0.076	V/C Ratio:	0.620
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	481	0.162	ITS:	0.000
	Left	1.00	1,600	53	0.033 *		
	Right	0.00	0	84	0.000	ICU:	0.720
Eastbound	Through	2.00	3,200	495	0.181		
	Left	1.00	1,600	90	0.056 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	119	0.000	N/S 1:	0.332 *
Southbound	Through	2.00	3,200	699	0.256	N/S 2:	0.309
	Left	1.00	1,600	101	0.063 *	E/W 1:	0.501 *
	Right	0.00	0	99	0.000	E/W 2:	0.323
Westbound	Through	2.00	3,200	662	0.238		
	Left	1.00	1,600	90	0.056 *	V/C Ratio:	0.833
	Right	0.00	0	42	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	819	0.269 *	ITS:	0.000
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	125	0.000	ICU:	0.933
Eastbound	Through	2.00	3,200	1,299	0.445 *		
	Left	1.00	1,600	136	0.085	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	71	0.000	N/S 1:	0.274
Southbound	Through	2.00	3,200	1,219	0.403 *	N/S 2:	0.461 *
	Left	1.00	1,600	66	0.041	E/W 1:	0.268
	Right	0.00	0	111	0.000	E/W 2:	0.332 *
Westbound	Through	2.00	3,200	782	0.279 *		
	Left	1.00	1,600	157	0.098	V/C Ratio:	0.793
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	709	0.233	ITS:	0.000
	Left	1.00	1,600	92	0.058 *		
	Right	0.00	0	142	0.000	ICU:	0.893
Eastbound	Through	2.00	3,200	402	0.170		
	Left	1.00	1,600	84	0.053 *	LOS:	D

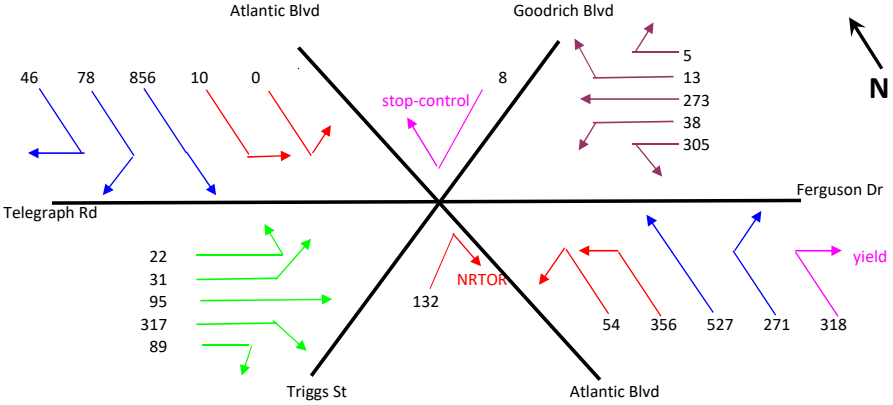
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	30	0.000	N/S 1:	0.433 *
Southbound	Through	2.00	3,200	1,163	0.373	N/S 2:	0.424
	Left	1.00	1,600	62	0.039 *	E/W 1:	0.458 *
	Right	0.00	0	70	0.000	E/W 2:	0.272
Westbound	Through	2.00	3,200	466	0.168		
	Left	1.00	1,600	67	0.042 *	V/C Ratio:	0.891
	Right	0.00	0	79	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,181	0.394 *	ITS:	0.000
	Left	1.00	1,600	81	0.051		
	Right	0.00	0	213	0.000	ICU:	0.991
Eastbound	Through	2.00	3,200	1,117	0.416 *		
	Left	1.00	1,600	166	0.104	LOS:	E

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project Conditions - AM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{54 + 356}{2} = 205$ or

Southbound Left: $\frac{10 + 0}{1} = 10$ or

Northbound Right: 132

Critical Volume #1 (CV1): **205**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{527 + 271}{3} = 266$ or

Southbound Through + Right $\frac{856 + 78 + 46}{3} = 327$

Critical Volume #2 (CV2): **327**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{305 + 38}{1} = 343$ or

Westbound Through + Right: $\frac{273 + 13 + 5}{2} = 146$ or

Westbound Right: 13 + 5 = 18

Critical Volume #3 (CV3): **343**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{22 + 31 + 95}{1} = 148$ or

Eastbound Through: $\frac{317}{3} = 105.7$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **148**

Critical Volume: 205 + 327 + 343 + 148 = **1,023**

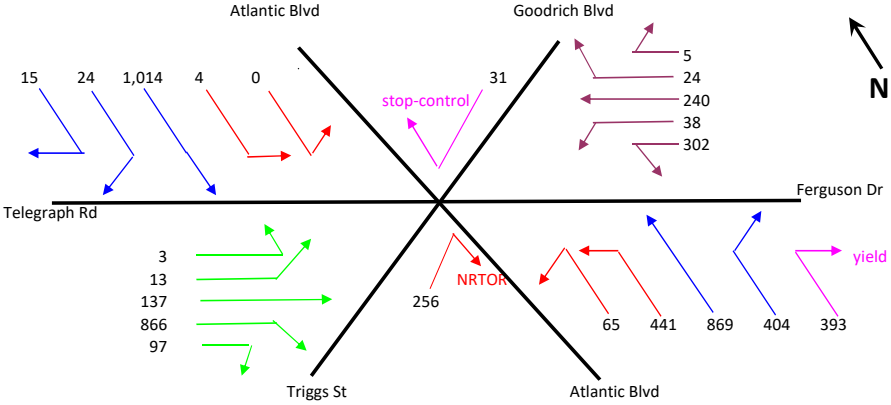
Intersection V/C: $\frac{1,023}{1,375} =$ **0.744**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.744** **Intersection LOS:** **C**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project Conditions - PM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{65 + 441}{2} = 253$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 256

Critical Volume #1 (CV1): **256**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{869 + 404}{3} = 424$ or

Southbound Through + Right $\frac{1,014 + 24 + 15}{3} = 351$

Critical Volume #2 (CV2): **424**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{302 + 38}{1} = 340$ or

Westbound Through + Right: $\frac{240 + 24 + 5}{2} = 135$ or

Westbound Right: 24 + 5 = 29

Critical Volume #3 (CV3): **340**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 13 + 137}{1} = 153$ or

Eastbound Through: $\frac{866}{3} = 288.7$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **289**

Critical Volume: 256 + 424 + 340 + 289 = **1,309**

Intersection V/C: $\frac{1,309}{1,375} =$ **0.952**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.952** **Intersection LOS:** **E**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	238	0.000	N/S 1:	0.362
Southbound	Through	2.00	3,200	1,204	0.451 *	N/S 2:	0.470 *
	Left	1.00	1,600	200	0.125	E/W 1:	0.090
	Right	0.00	1,600	231	0.144 *	E/W 2:	0.182 *
Westbound	Through	2.00	1,600	116	0.109		
	Left	0.00	1,600	59	0.037	V/C Ratio:	0.652
	Right	0.00	0	69	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	688	0.237	ITS:	0.000
	Left	1.00	1,600	31	0.019 *		
	Right	0.00	0	8	0.000	ICU:	0.752
Eastbound	Through	2.00	1,600	16	0.053		
	Left	0.00	1,600	60	0.038 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	198	0.000	N/S 1:	0.471 *
Southbound	Through	2.00	3,200	1,275	0.460	N/S 2:	0.465
	Left	1.00	1,600	144	0.090 *	E/W 1:	0.317 *
	Right	0.00	1,600	154	0.096	E/W 2:	0.262
Westbound	Through	2.00	1,600	27	0.048		
	Left	0.00	1,600	49	0.031 *	V/C Ratio:	0.788
	Right	0.00	0	39	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,181	0.381 *	ITS:	0.000
	Left	1.00	1,600	8	0.005		
	Right	0.00	0	27	0.000	ICU:	0.888
Eastbound	Through	2.00	1,600	165	0.286 *		
	Left	0.00	1,600	266	0.166	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.207
Southbound	Through	3.00	4,800	1,351	0.284 *	N/S 2:	0.333 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.021 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.354
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	992	0.207	ITS:	0.000
	Left	1.00	1,600	79	0.049 *		
	Right	0.00	0	34	0.000	ICU:	0.454
Eastbound	Through	1.00	1,600	0	0.021 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.280 *
Southbound	Through	3.00	4,800	1,224	0.256	N/S 2:	0.268
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.044 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.324
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,343	0.280 *	ITS:	0.000
	Left	1.00	1,600	19	0.012		
	Right	0.00	0	70	0.000	ICU:	0.424
Eastbound	Through	1.00	1,600	0	0.044 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	287	0.059		N/S 1:	0.277 *
Southbound	Through	2.00	3,200	762	0.238		N/S 2:	0.263
	Left	1.00	1,600	189	0.118	*	E/W 1:	0.158
	Right	0.00	0	160	0.000		E/W 2:	0.378 *
Westbound	Through	3.00	4,800	1,079	0.258	*		
	Left	1.00	1,600	51	0.032		V/C Ratio:	0.655
	Right	0.00	0	15	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	493	0.159	*	ITS:	0.000
	Left	1.00	1,600	40	0.025			
	Right	0.00	0	33	0.000		ICU:	0.755
Eastbound	Through	3.00	4,800	571	0.126			
	Left	1.00	1,600	192	0.120	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	295	0.041		N/S 1:	0.451 *
Southbound	Through	2.00	3,200	745	0.233		N/S 2:	0.249
	Left	1.00	1,600	301	0.188	*	E/W 1:	0.252
	Right	0.00	0	190	0.000		E/W 2:	0.335 *
Westbound	Through	3.00	4,800	727	0.191	*		
	Left	1.00	1,600	46	0.029		V/C Ratio:	0.786
	Right	0.00	0	59	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	781	0.263	*	ITS:	0.000
	Left	1.00	1,600	26	0.016			
	Right	0.00	0	36	0.000		ICU:	0.886
Eastbound	Through	3.00	4,800	1,036	0.223			
	Left	1.00	1,600	230	0.144	*	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.374 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.259 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	452	0.141		
	Left	1.00	1,600	228	0.143 *	V/C Ratio:	0.633
	Right	1.00	1,600	633	0.324	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,077	0.374 *		
	Right	3.00	4,800	1,201	0.000	ICU:	0.733
Eastbound	Through	2.00	3,200	372	0.116 *		
	Left	0.00	0	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.447 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.563 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	878	0.274		
	Left	1.00	1,600	577	0.361 *	V/C Ratio:	1.010
	Right	1.00	1,600	720	0.270	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,286	0.447 *		
	Right	3.00	4,800	1,848	0.000	ICU:	1.110
Eastbound	Through	2.00	3,200	646	0.202 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	68	0.000	N/S 1:	0.132 *
Southbound	Through	1.00	1,600	64	0.044 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.302
	Right	0.00	0	8	0.000	E/W 2:	0.317 *
Westbound	Through	2.00	3,200	405	0.129 *		
	Left	2.00	2,880	266	0.092	V/C Ratio:	0.449
	Right	0.00	1,600	22	0.014	Loss Time:	0.100
Northbound	Through	2.00	1,600	15	0.009	ITS:	0.000
	Left	1.71	2,457	215	0.088 *		
	Right	0.00	0	60	0.000	ICU:	0.549
Eastbound	Through	2.00	3,200	613	0.210		
	Left	1.00	1,600	301	0.188 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	339	0.139	N/S 1:	0.274 *
Southbound	Through	1.00	1,600	264	0.178 *	N/S 2:	0.000
	Left	0.00	1,600	21	0.013	E/W 1:	0.518 *
	Right	0.00	0	7	0.000	E/W 2:	0.416
Westbound	Through	2.00	3,200	860	0.271		
	Left	2.00	2,880	446	0.155 *	V/C Ratio:	0.792
	Right	0.00	1,600	48	0.030	Loss Time:	0.100
Northbound	Through	2.00	1,600	10	0.006	ITS:	0.000
	Left	1.58	2,277	219	0.096 *		
	Right	0.00	0	101	0.000	ICU:	0.892
Eastbound	Through	2.00	3,200	1,062	0.363 *		
	Left	1.00	1,600	232	0.145	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.95	3,120	78	0.000	N/S 1:	0.028 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.05	1,512	42	0.028 *	E/W 1:	0.115
	Right	1.00	1,600	89	0.028	E/W 2:	0.223 *
Westbound	Through	3.00	4,800	733	0.153 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.251
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.351
Eastbound	Through	2.00	3,200	368	0.115		
	Left	2.00	2,880	201	0.070 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.99	3,187	478	0.071	N/S 1:	0.167 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.071
	Left	1.01	1,452	242	0.167 *	E/W 1:	0.209
	Right	1.00	1,600	258	0.000	E/W 2:	0.312 *
Westbound	Through	3.00	4,800	738	0.154 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.479
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.579
Eastbound	Through	2.00	3,200	669	0.209		
	Left	2.00	2,880	455	0.158 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	28	0.000	N/S 1:	0.022 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	35	0.022 *	E/W 1:	0.068
	Right	0.00	0	112	0.000	E/W 2:	0.237 *
Westbound	Through	3.00	4,800	797	0.189 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.259
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.359
Eastbound	Through	3.00	4,800	325	0.068		
	Left	1.00	1,600	76	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	170	0.076	N/S 1:	0.153 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.076
	Left	1.00	1,600	245	0.153 *	E/W 1:	0.173
	Right	0.00	0	122	0.000	E/W 2:	0.255 *
Westbound	Through	3.00	4,800	812	0.195 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.408
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.508
Eastbound	Through	3.00	4,800	831	0.173		
	Left	1.00	1,600	96	0.060 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.50	795	44	0.036	N/S 1:	0.061 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.036
	Left	1.50	2,164	133	0.061 *	E/W 1:	0.059
	Right	0.00	0	190	0.000	E/W 2:	0.254 *
Westbound	Through	3.00	4,800	837	0.215 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.315
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.415
Eastbound	Through	3.00	4,800	273	0.057		
	Left	1.00	1,600	62	0.039 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.46	733	93	0.095	N/S 1:	0.141 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.095
	Left	1.54	2,220	313	0.141 *	E/W 1:	0.202
	Right	0.00	0	154	0.000	E/W 2:	0.259 *
Westbound	Through	3.00	4,800	782	0.195 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.400
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.500
Eastbound	Through	3.00	4,800	971	0.202		
	Left	1.00	1,600	102	0.064 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	11	0.000	N/S 1:	0.143 *
Southbound	Through	1.00	1,600	14	0.016 *	N/S 2:	0.000
	Left	1.00	1,600	17	0.011	E/W 1:	0.400 *
	Right	0.00	0	9	0.000	E/W 2:	0.173
Westbound	Through	3.00	4,800	820	0.173		
	Left	1.00	1,600	505	0.316 *	V/C Ratio:	0.543
	Right	1.00	1,600	304	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.127 *	ITS:	0.000
	Left	0.00	1,600	198	0.124		
	Right	0.00	0	35	0.000	ICU:	0.643
Eastbound	Through	3.00	4,800	366	0.084 *		
	Left	1.00	1,600	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	17	0.000	N/S 1:	0.190 *
Southbound	Through	1.00	1,600	74	0.057 *	N/S 2:	0.000
	Left	1.00	1,600	32	0.020	E/W 1:	0.621 *
	Right	0.00	0	52	0.000	E/W 2:	0.179
Westbound	Through	3.00	4,800	707	0.158		
	Left	1.00	1,600	605	0.378 *	V/C Ratio:	0.811
	Right	1.00	1,600	215	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	12	0.133 *	ITS:	0.000
	Left	0.00	1,600	200	0.125		
	Right	0.00	0	64	0.000	ICU:	0.911
Eastbound	Through	3.00	4,800	1,103	0.243 *		
	Left	1.00	1,600	34	0.021	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	534	0.245	N/S 1:	0.396 *
Southbound	Through	2.00	3,200	720	0.225	N/S 2:	0.295
	Left	1.00	1,600	33	0.021 *	E/W 1:	0.194
	Right	0.00	0	54	0.000	E/W 2:	0.287 *
Westbound	Through	2.00	3,200	581	0.198 *		
	Left	1.00	1,600	248	0.155	V/C Ratio:	0.683
	Right	0.00	0	148	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,053	0.375 *	ITS:	0.000
	Left	2.00	2,880	145	0.050		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.783
Eastbound	Through	2.00	3,200	125	0.039		
	Left	2.00	2,880	255	0.089 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	586	0.219	N/S 1:	0.449 *
Southbound	Through	2.00	3,200	642	0.201	N/S 2:	0.285
	Left	1.00	1,600	70	0.044 *	E/W 1:	0.287
	Right	0.00	0	48	0.000	E/W 2:	0.322 *
Westbound	Through	2.00	3,200	511	0.175 *		
	Left	1.00	1,600	196	0.123	V/C Ratio:	0.771
	Right	0.00	0	249	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,048	0.405 *	ITS:	0.000
	Left	2.00	2,880	189	0.066		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.871
Eastbound	Through	2.00	3,200	525	0.164		
	Left	2.00	2,880	423	0.147 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	70	0.037	N/S 1:	0.355
Southbound	Through	2.00	3,200	1,159	0.362 *	N/S 2:	0.366 *
	Left	1.00	1,600	75	0.047	E/W 1:	0.280 *
	Right	1.00	1,600	212	0.109	E/W 2:	0.222
Westbound	Through	2.00	3,200	664	0.208		
	Left	2.00	2,880	593	0.206 *	V/C Ratio:	0.646
	Right	1.00	1,600	431	0.063	Loss Time:	0.100
Northbound	Through	2.00	3,200	978	0.308	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	118	0.074 *	ICU:	0.746
Eastbound	Through	2.00	3,200	166	0.052		
	Left	1.00	1,600	23	0.014	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	61	0.027	N/S 1:	0.319 *
Southbound	Through	2.00	3,200	1,003	0.313	N/S 2:	0.315
	Left	1.00	1,600	104	0.065 *	E/W 1:	0.317 *
	Right	1.00	1,600	335	0.177	E/W 2:	0.199
Westbound	Through	2.00	3,200	350	0.109		
	Left	2.00	2,880	316	0.110 *	V/C Ratio:	0.636
	Right	1.00	1,600	405	0.143	Loss Time:	0.100
Northbound	Through	2.00	3,200	811	0.254 *	ITS:	0.000
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	270	0.169	ICU:	0.736
Eastbound	Through	2.00	3,200	661	0.207 *		
	Left	1.00	1,600	35	0.022	LOS:	C

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.044
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.223 *
	Left	0.00	0	0	0.000	E/W 1:	0.515 *
	Right	0.00	0	0	0.000	E/W 2:	0.291
Westbound	Through	2.00	3,200	930	0.291		
	Left	1.00	1,600	500	0.313 *	V/C Ratio:	0.738
	Right	0.03	45	9	0.044	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.97	2,840	632	0.223 *		
	Right	0.00	0	161	0.000	ICU:	0.838
Eastbound	Through	2.00	3,200	485	0.202 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.019
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.172 *
	Left	0.00	0	0	0.000	E/W 1:	0.624 *
	Right	0.00	0	0	0.000	E/W 2:	0.172
Westbound	Through	2.00	3,200	551	0.172		
	Left	1.00	1,600	434	0.271 *	V/C Ratio:	0.796
	Right	0.11	181	28	0.019	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.89	2,717	468	0.172 *		
	Right	0.00	0	241	0.000	ICU:	0.896
Eastbound	Through	2.00	3,200	887	0.353 *		
	Left	0.00	0	0	0.000	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.361
Southbound	Through	1.00	1,600	834	0.521 *	N/S 2:	0.521 *
	Left	2.00	2,880	622	0.216	E/W 1:	0.000
	Right	3.00	4,800	1,027	0.106 *	E/W 2:	0.106 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.627
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	695	0.145	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.727
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.560
Southbound	Through	1.00	1,600	1,423	0.889 *	N/S 2:	0.889 *
	Left	2.00	2,880	1,042	0.362	E/W 1:	0.000
	Right	3.00	4,800	1,021	0.032 *	E/W 2:	0.032 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.921
	Right	0.00	0	5	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	945	0.198	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.021
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	11	0.000	N/S 1:	0.185 *
Southbound	Through	2.00	3,200	423	0.136	N/S 2:	0.137
	Left	2.00	2,880	189	0.066 *	E/W 1:	0.177 *
	Right	1.96	3,143	498	0.126	E/W 2:	0.000
Westbound	Through	0.04	57	9	0.158 *		
	Left	1.00	1,600	246	0.154	V/C Ratio:	0.362
	Right	0.00	0	34	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	537	0.119 *	ITS:	0.000
	Left	1.00	1,600	1	0.001		
	Right	0.00	0	0	0.000	ICU:	0.462
Eastbound	Through	2.00	3,200	57	0.019 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.248 *
Southbound	Through	2.00	3,200	764	0.244	N/S 2:	0.245
	Left	2.00	2,880	273	0.095 *	E/W 1:	0.124 *
	Right	1.92	3,076	323	0.058	E/W 2:	0.000
Westbound	Through	0.08	124	13	0.105 *		
	Left	1.00	1,600	98	0.061	V/C Ratio:	0.372
	Right	0.00	0	35	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	698	0.153 *	ITS:	0.000
	Left	1.00	1,600	1	0.001		
	Right	0.00	0	14	0.000	ICU:	0.472
Eastbound	Through	2.00	3,200	29	0.019 *		
	Left	0.00	1,600	17	0.011	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	145	0.067	N/S 1:	0.128
Southbound	Through	2.00	3,200	595	0.186 *	N/S 2:	0.215 *
	Left	1.00	1,600	13	0.008	E/W 1:	0.140
	Right	0.00	0	22	0.000	E/W 2:	0.162 *
Westbound	Through	3.00	4,800	524	0.114 *		
	Left	1.00	1,600	38	0.024	V/C Ratio:	0.377
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	548	0.120	ITS:	0.000
	Left	1.00	1,600	47	0.029 *		
	Right	0.00	0	72	0.000	ICU:	0.477
Eastbound	Through	3.00	4,800	486	0.116		
	Left	1.00	1,600	77	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	172	0.082	N/S 1:	0.160
Southbound	Through	2.00	3,200	1,035	0.323 *	N/S 2:	0.379 *
	Left	1.00	1,600	10	0.006	E/W 1:	0.169
	Right	0.00	0	40	0.000	E/W 2:	0.235 *
Westbound	Through	3.00	4,800	843	0.184 *		
	Left	1.00	1,600	54	0.034	V/C Ratio:	0.614
	Right	0.00	0	21	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	720	0.154	ITS:	0.000
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	58	0.000	ICU:	0.714
Eastbound	Through	3.00	4,800	589	0.135		
	Left	1.00	1,600	82	0.051 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	22	0.000	N/S 1:	0.117
Southbound	Through	3.00	4,800	492	0.107 *	N/S 2:	0.150 *
	Left	1.00	1,600	39	0.024	E/W 1:	0.108
	Right	0.00	0	21	0.000	E/W 2:	0.138 *
Westbound	Through	3.00	4,800	582	0.126 *		
	Left	1.00	1,600	36	0.023	V/C Ratio:	0.288
	Right	0.00	0	17	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	428	0.093	ITS:	0.000
	Left	1.00	1,600	68	0.043 *		
	Right	0.00	0	71	0.000	ICU:	0.388
Eastbound	Through	3.00	4,800	338	0.085		
	Left	1.00	1,600	19	0.012 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	31	0.000	N/S 1:	0.175
Southbound	Through	3.00	4,800	603	0.132 *	N/S 2:	0.188 *
	Left	1.00	1,600	55	0.034	E/W 1:	0.178 *
	Right	0.00	0	32	0.000	E/W 2:	0.171
Westbound	Through	3.00	4,800	679	0.148		
	Left	1.00	1,600	29	0.018 *	V/C Ratio:	0.366
	Right	0.00	0	27	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	652	0.141	ITS:	0.000
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	78	0.000	ICU:	0.466
Eastbound	Through	3.00	4,800	688	0.160 *		
	Left	1.00	1,600	36	0.023	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.265 *
Southbound	Through	3.00	4,800	1,158	0.241	N/S 2:	0.241
	Left	1.00	1,600	108	0.068 *	E/W 1:	0.068
	Right	0.00	0	0	0.000	E/W 2:	0.240 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.505
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	630	0.197 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	108	0.068	ICU:	0.605
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	690	0.240 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.574 *
Southbound	Through	3.00	4,800	1,000	0.208	N/S 2:	0.208
	Left	1.00	1,600	301	0.188 *	E/W 1:	0.017
	Right	0.00	0	0	0.000	E/W 2:	0.087 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.661
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,236	0.386 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	27	0.017	ICU:	0.761
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	251	0.087 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	2.00	3,200	794	0.131		N/S 1:	0.238 *
Southbound	Through	3.00	4,800	664	0.138		N/S 2:	0.190
	Left	1.00	1,600	56	0.035	*	E/W 1:	0.316 *
	Right	2.00	3,200	250	0.061		E/W 2:	0.000
Westbound	Through	1.00	1,600	260	0.163	*		
	Left	1.00	1,600	146	0.091		V/C Ratio:	0.554
	Right	0.00	0	306	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,321	0.203	*	ITS:	0.000
	Left	1.00	1,600	83	0.052			
	Right	0.00	0	122	0.000		ICU:	0.654
Eastbound	Through	3.00	4,800	612	0.153	*		
	Left	1.00	1,600	187	0.117		LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	309	0.000		N/S 1:	0.208
Southbound	Through	4.00	6,400	1,244	0.194	*	N/S 2:	0.222 *
	Left	1.00	1,600	33	0.021		E/W 1:	0.449 *
	Right	2.00	3,200	475	0.138		E/W 2:	0.000
Westbound	Through	1.00	1,600	174	0.109			
	Left	1.00	1,600	292	0.183	*	V/C Ratio:	0.671
	Right	0.00	0	221	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,271	0.187		ITS:	0.000
	Left	1.00	1,600	45	0.028	*		
	Right	0.00	1,600	425	0.266	*	ICU:	0.771
Eastbound	Through	2.56	2,493	534	0.214			
	Left	1.44	2,076	494	0.238		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	738	0.364	N/S 1:	0.479 *
Southbound	Through	2.00	3,200	831	0.260	N/S 2:	0.411
	Left	1.00	1,600	289	0.181 *	E/W 1:	0.188
	Right	1.00	1,600	364	0.137 *	E/W 2:	0.235 *
Westbound	Through	2.00	3,200	185	0.058		
	Left	1.00	1,600	181	0.113	V/C Ratio:	0.714
	Right	1.00	1,600	98	0.005	Loss Time:	0.100
Northbound	Through	2.00	3,200	952	0.298 *	ITS:	0.000
	Left	1.00	1,600	75	0.047		
	Right	0.00	0	29	0.000	ICU:	0.814
Eastbound	Through	2.00	3,200	210	0.075		
	Left	1.00	1,600	156	0.098 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	297	0.046	N/S 1:	0.452 *
Southbound	Through	2.00	3,200	1,085	0.339	N/S 2:	0.366
	Left	1.00	1,600	290	0.181 *	E/W 1:	0.330 *
	Right	1.00	1,600	150	0.003	E/W 2:	0.152
Westbound	Through	2.00	3,200	43	0.013		
	Left	1.00	1,600	56	0.035 *	V/C Ratio:	0.782
	Right	1.00	1,600	180	0.095	Loss Time:	0.100
Northbound	Through	2.00	3,200	868	0.271 *	ITS:	0.000
	Left	1.00	1,600	43	0.027		
	Right	0.00	0	98	0.000	ICU:	0.882
Eastbound	Through	2.00	3,200	845	0.295 *		
	Left	1.00	1,600	223	0.139	LOS:	D

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	13	7	213	30	9	139
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]	13	7	213	30	9	139
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	53	8	2	35
Total Analysis Volume [veh/h]	13	7	213	30	9	139
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.03	9.60	0.00	0.00	7.74	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft]	2.30	2.30	0.00	0.00	0.51	0.00
d_A, Approach Delay [s/veh]	10.53		0.00		0.47	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.68					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	9	21	183	28	58	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]	9	21	183	28	58	144
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	46	7	15	36
Total Analysis Volume [veh/h]	9	21	183	28	58	144
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	11.91	9.48	0.00	0.00	7.77	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.13	0.13	0.00	0.00	0.13	0.00
95th-Percentile Queue Length [ft]	3.25	3.25	0.00	0.00	3.34	0.00
d_A, Approach Delay [s/veh]	10.21		0.00		2.23	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.71					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	88	149	97	143	50	66
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]	88	149	97	143	50	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	37	24	36	13	17
Total Analysis Volume [veh/h]	88	149	97	143	50	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.10	0.08
d_M, Delay for Movement [s/veh]	7.91	0.00	0.00	0.00	13.42	10.28
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.65	0.65	0.00	0.00	0.64	0.64
95th-Percentile Queue Length [ft]	16.23	16.23	0.00	0.00	15.89	15.89
d_A, Approach Delay [s/veh]	2.94		0.00		11.63	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.45					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	6	18	125	572	749	51
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]	6	18	125	572	749	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	31	143	187	13
Total Analysis Volume [veh/h]	6	18	125	572	749	51
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.03	0.15	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	33.07	11.67	10.19	0.00	0.00	0.00
Movement LOS	D	B	B	A	A	A
95th-Percentile Queue Length [veh]	0.24	0.24	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	5.97	5.97	13.43	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.02		1.83		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.11					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	5,462.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	12.240

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	0	0	0	32	128	123	0	21	0	0	0
Total Analysis Volume [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	12.24	0.01	0.00	0.00	0.82	0.47	0.30	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	5462.35	5289.10	0.00	0.00	88.99	11.23	8.18	0.00	0.00	7.38	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	29.11	29.11	0.00	0.00	5.35	2.57	1.30	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	727.75	727.75	0.00	0.00	133.68	64.23	32.42	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	5461.59			26.63			6.99			2.46		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	878.71											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	87	25	0	26	14	0
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]	87	25	0	26	14	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	6	0	7	4	0
Total Analysis Volume [veh/h]	87	25	0	26	14	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.44	0.00	9.21	8.83
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.23	1.23
d_A, Approach Delay [s/veh]	0.00		0.00		9.21	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.85					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.251

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	103	43	184	113	43	338
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]	103	43	184	113	43	338
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	11	46	28	11	85
Total Analysis Volume [veh/h]	103	43	184	113	43	338
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.05	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	17.02	12.76	0.00	0.00	7.95	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.27	1.27	0.00	0.00	0.11	0.00
95th-Percentile Queue Length [ft]	31.87	31.87	0.00	0.00	2.64	0.00
d_A, Approach Delay [s/veh]	15.76		0.00		0.90	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.21					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.219

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	97	135	170	53	66	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	135	170	53	66	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	34	43	13	17	68
Total Analysis Volume [veh/h]	97	135	170	53	66	270
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.16	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	16.69	12.81	0.00	0.00	7.81	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.77	1.77	0.00	0.00	0.15	0.00
95th-Percentile Queue Length [ft]	44.18	44.18	0.00	0.00	3.86	0.00
d_A, Approach Delay [s/veh]	14.44		0.00		1.53	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.89					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.364

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	75	148	156	106	179	175
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]	75	148	156	106	179	175
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	37	39	27	45	44
Total Analysis Volume [veh/h]	75	148	156	106	179	175
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.36	0.21
d_M, Delay for Movement [s/veh]	7.93	0.00	0.00	0.00	19.88	16.90
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.62	0.62	0.00	0.00	3.64	3.64
95th-Percentile Queue Length [ft]	15.43	15.43	0.00	0.00	90.98	90.98
d_A, Approach Delay [s/veh]	2.67		0.00		18.40	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	8.47					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	466.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.437

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	61	115	142	1078	1131	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	115	142	1078	1131	49
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	29	36	270	283	12
Total Analysis Volume [veh/h]	61	115	142	1078	1131	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.44	0.25	0.24	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	466.14	389.05	13.07	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh]	13.73	13.73	0.94	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	343.27	343.27	23.50	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	415.77		1.52		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	29.13					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	1	0	0	8	17	240	0	89	0	0	0
Total Analysis Volume [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.18	0.00	0.00	2.00	0.06	0.59	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	946.32	8.54	10.36	0.00	0.00	8.00	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	23.92	23.92	0.00	0.00	4.70	0.20	4.12	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	597.89	597.89	0.00	0.00	117.46	5.09	102.93	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			311.94			7.55			2.67		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1097.51											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.100

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	137	77	4	46	76	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	77	4	46	76	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	19	1	12	19	1
Total Analysis Volume [veh/h]	137	77	4	46	76	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.66	0.00	10.32	9.71
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.11	0.11	0.36	0.36
95th-Percentile Queue Length [ft]	0.00	0.00	2.87	2.87	8.88	8.88
d_A, Approach Delay [s/veh]	0.00		0.61		10.28	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.50					
Intersection LOS	B					

EXISTING WITH PROJECT SATURDAY CONDITIONS - YEAR 2018

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	164	0.000		N/S 1:	0.387 *
Southbound	Through	2.00	3,200	712	0.274		N/S 2:	0.356
	Left	1.00	1,600	289	0.181	*	E/W 1:	0.333 *
	Right	1.00	1,600	226	0.051		E/W 2:	0.314
Westbound	Through	2.00	3,200	721	0.225			
	Left	1.00	1,600	164	0.103	*	V/C Ratio:	0.720
	Right	0.00	0	123	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	535	0.206	*	ITS:	0.000
	Left	1.00	1,600	131	0.082			
	Right	1.00	1,600	118	0.033		ICU:	0.820
Eastbound	Through	2.00	3,200	736	0.230	*		
	Left	1.00	1,600	142	0.089		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	184	0.000		N/S 1:	0.243
Southbound	Through	2.00	3,200	876	0.331	*	N/S 2:	0.387 *
	Left	1.00	1,600	107	0.067		E/W 1:	0.346 *
	Right	0.00	0	86	0.000		E/W 2:	0.327
Westbound	Through	2.00	3,200	646	0.229			
	Left	1.00	1,600	133	0.083	*	V/C Ratio:	0.733
	Right	0.00	0	56	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	507	0.176		ITS:	0.000
	Left	1.00	1,600	90	0.056	*		
	Right	0.00	0	142	0.000		ICU:	0.833
Eastbound	Through	2.00	3,200	699	0.263	*		
	Left	1.00	1,600	157	0.098		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

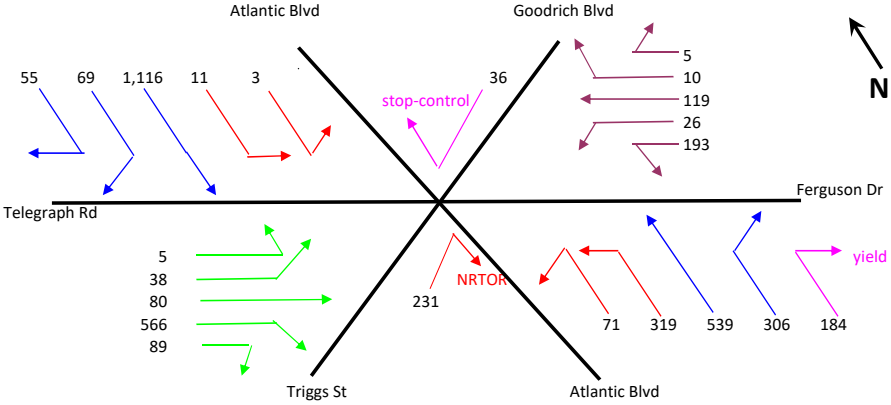
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	55	0.000		N/S 1:	0.301
Southbound	Through	2.00	3,200	797	0.266	*	N/S 2:	0.364 *
	Left	1.00	1,600	62	0.039		E/W 1:	0.253 *
	Right	0.00	0	98	0.000		E/W 2:	0.194
Westbound	Through	2.00	3,200	351	0.140			
	Left	1.00	1,600	88	0.055	*	V/C Ratio:	0.617
	Right	0.00	0	72	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	765	0.262		ITS:	0.000
	Left	1.00	1,600	156	0.098	*		
	Right	0.00	0	167	0.000		ICU:	0.717
Eastbound	Through	2.00	3,200	467	0.198	*		
	Left	1.00	1,600	87	0.054		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project Conditions - MD Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{71 + 319}{2} = 195$ or

Southbound Left: $\frac{11 + 3}{1} = 14$ or

Northbound Right: 231

Critical Volume #1 (CV1): **231**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{539 + 306}{3} = 282$ or

Southbound Through + Right $\frac{1,116 + 69 + 55}{3} = 413$

Critical Volume #2 (CV2): **413**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{193 + 26}{1} = 219$ or

Westbound Through + Right: $\frac{119 + 10 + 5}{2} = 67$ or

Westbound Right: 10 + 5 = 15

Critical Volume #3 (CV3): **219**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 38 + 80}{1} = 123$ or

Eastbound Through: $\frac{566}{3} = 188.7$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **189**

Critical Volume: 231 + 413 + 219 + 189 = **1,052**

Intersection V/C: $\frac{1,052}{1,375} =$ **0.765**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.765** **Intersection LOS:** **C**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	135	0.000	N/S 1:	0.322 *
Southbound	Through	2.00	3,200	874	0.315	N/S 2:	0.321
	Left	1.00	1,600	75	0.047 *	E/W 1:	0.091
	Right	0.00	1,600	94	0.059 *	E/W 2:	0.121 *
Westbound	Through	2.00	1,600	13	0.019		
	Left	0.00	1,600	17	0.011	V/C Ratio:	0.443
	Right	0.00	0	6	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	873	0.275 *	ITS:	0.000
	Left	1.00	1,600	9	0.006		
	Right	0.00	0	18	0.000	ICU:	0.543
Eastbound	Through	2.00	1,600	11	0.080		
	Left	0.00	1,600	99	0.062 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.199
Southbound	Through	3.00	4,800	966	0.202 *	N/S 2:	0.211 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.012 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.223
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	953	0.199	ITS:	0.000
	Left	1.00	1,600	15	0.009 *		
	Right	0.00	0	19	0.000	ICU:	0.323
Eastbound	Through	1.00	1,600	0	0.012 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	239	0.019	N/S 1:	0.291 *
Southbound	Through	2.00	3,200	474	0.148	N/S 2:	0.158
	Left	1.00	1,600	210	0.131 *	E/W 1:	0.173
	Right	0.00	0	192	0.000	E/W 2:	0.313 *
Westbound	Through	3.00	4,800	683	0.182 *		
	Left	1.00	1,600	39	0.024	V/C Ratio:	0.604
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	475	0.160 *	ITS:	0.000
	Left	1.00	1,600	16	0.010		
	Right	0.00	0	23	0.000	ICU:	0.704
Eastbound	Through	3.00	4,800	692	0.149		
	Left	1.00	1,600	209	0.131 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.584 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.523 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	637	0.199		
	Left	1.00	1,600	455	0.284 *	V/C Ratio:	1.107
	Right	1.00	1,600	1,162	0.584 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	785	0.273		
	Right	3.00	4,800	1,387	0.016	ICU:	1.207
Eastbound	Through	2.00	3,200	766	0.239 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	229	0.034		N/S 1:	0.219 *
Southbound	Through	1.00	1,600	173	0.125	*	N/S 2:	0.000
	Left	0.00	1,600	27	0.017		E/W 1:	0.662 *
	Right	0.00	0	12	0.000		E/W 2:	0.450
Westbound	Through	2.00	3,200	730	0.232			
	Left	2.00	2,880	483	0.168	*	V/C Ratio:	0.881
	Right	0.00	1,600	115	0.072		Loss Time:	0.100
Northbound	Through	2.00	1,600	8	0.005		ITS:	0.000
	Left	1.09	1,573	148	0.094	*		
	Right	0.00	0	57	0.000		ICU:	0.981
Eastbound	Through	2.00	3,200	1,525	0.494	*		
	Left	1.00	1,600	349	0.218		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.78	2,854	446	0.010		N/S 1:	0.174 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.010
	Left	1.22	1,751	304	0.174	*	E/W 1:	0.210
	Right	1.00	1,600	499	0.138		E/W 2:	0.475 *
Westbound	Through	3.00	4,800	872	0.182	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.649
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.749
Eastbound	Through	2.00	3,200	671	0.210			
	Left	2.00	2,880	844	0.293	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	323	0.150		N/S 1:	0.188 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.150
	Left	1.00	1,600	300	0.188	*	E/W 1:	0.166
	Right	0.00	0	221	0.000		E/W 2:	0.365 *
Westbound	Through	3.00	4,800	1,035	0.262	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.553
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.653
Eastbound	Through	3.00	4,800	795	0.166			
	Left	1.00	1,600	165	0.103	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.56	894	88	0.069	N/S 1:	0.109 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.069
	Left	1.44	2,075	227	0.109 *	E/W 1:	0.192
	Right	0.00	0	187	0.000	E/W 2:	0.339 *
Westbound	Through	3.00	4,800	1,158	0.280 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.448
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.548
Eastbound	Through	3.00	4,800	917	0.191		
	Left	1.00	1,600	95	0.059 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	16	0.000		N/S 1:	0.301	*
Southbound	Through	1.00	1,600	35	0.032	*	N/S 2:	0.000	
	Left	1.00	1,600	30	0.019		E/W 1:	0.552	*
	Right	0.00	0	53	0.000		E/W 2:	0.236	
Westbound	Through	3.00	4,800	979	0.215				
	Left	1.00	1,600	500	0.313	*	V/C Ratio:	0.853	
	Right	1.00	1,600	214	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	31	0.269	*	ITS:	0.000	
	Left	0.00	1,600	399	0.249				
	Right	0.00	0	79	0.000		ICU:	0.953	
Eastbound	Through	3.00	4,800	1,067	0.239	*			
	Left	1.00	1,600	34	0.021		LOS:	E	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	573	0.207 *	N/S 1:	0.343
Southbound	Through	2.00	3,200	424	0.133	N/S 2:	0.368 *
	Left	1.00	1,600	67	0.042	E/W 1:	0.219
	Right	0.00	0	48	0.000	E/W 2:	0.345 *
Westbound	Through	2.00	3,200	572	0.194 *		
	Left	1.00	1,600	158	0.099	V/C Ratio:	0.713
	Right	0.00	0	167	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	795	0.301	ITS:	0.000
	Left	2.00	2,880	464	0.161 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.813
Eastbound	Through	2.00	3,200	383	0.120		
	Left	2.00	2,880	434	0.151 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	134	0.084	N/S 1:	0.157
Southbound	Through	2.00	3,200	564	0.176 *	N/S 2:	0.237 *
	Left	1.00	1,600	31	0.019	E/W 1:	0.221 *
	Right	1.00	1,600	330	0.206	E/W 2:	0.214
Westbound	Through	2.00	3,200	510	0.159		
	Left	2.00	2,880	269	0.093 *	V/C Ratio:	0.458
	Right	1.00	1,600	296	0.092	Loss Time:	0.100
Northbound	Through	2.00	3,200	441	0.138	ITS:	0.000
	Left	1.00	1,600	98	0.061 *		
	Right [1]	1.00	1,600	204	0.128 *	ICU:	0.558
Eastbound	Through	2.00	3,200	343	0.107		
	Left	1.00	1,600	13	0.008	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.059
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.154 *
	Left	0.00	0	0	0.000		E/W 1:	0.385 *
	Right	0.00	0	0	0.000		E/W 2:	0.178
Westbound	Through	2.00	3,200	568	0.178			
	Left	1.00	1,600	255	0.159	*	V/C Ratio:	0.539
	Right	0.09	137	19	0.059		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.91	2,756	424	0.154	*		
	Right	0.00	0	177	0.000		ICU:	0.639
Eastbound	Through	2.00	3,200	547	0.226	*		
	Left	0.00	0	0	0.000		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.428
Southbound	Through	1.00	1,600	1,058	0.661 *	N/S 2:	0.661 *
	Left	2.00	2,880	720	0.250	E/W 1:	0.000
	Right	3.00	4,800	1,071	0.098 *	E/W 2:	0.098 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.759
	Right	0.00	0	6	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	849	0.178	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.859
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	23	0.000	N/S 1:	0.189 *
Southbound	Through	2.00	3,200	465	0.153	N/S 2:	0.154
	Left	2.00	2,880	276	0.096 *	E/W 1:	0.218 *
	Right	1.98	3,165	641	0.155	E/W 2:	0.000
Westbound	Through	0.02	35	7	0.202 *		
	Left	1.00	1,600	41	0.026	V/C Ratio:	0.407
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	408	0.093 *	ITS:	0.000
	Left	1.00	1,600	1	0.001		
	Right	0.00	0	5	0.000	ICU:	0.507
Eastbound	Through	2.00	3,200	40	0.016 *		
	Left	0.00	1,600	7	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	188	0.081	N/S 1:	0.147
Southbound	Through	2.00	3,200	704	0.220 *	N/S 2:	0.253 *
	Left	1.00	1,600	21	0.013	E/W 1:	0.123
	Right	0.00	0	34	0.000	E/W 2:	0.178 *
Westbound	Through	3.00	4,800	467	0.104 *		
	Left	1.00	1,600	45	0.028	V/C Ratio:	0.431
	Right	0.00	0	45	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	596	0.134	ITS:	0.000
	Left	1.00	1,600	52	0.033 *		
	Right	0.00	0	49	0.000	ICU:	0.531
Eastbound	Through	3.00	4,800	405	0.095		
	Left	1.00	1,600	118	0.074 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	40	0.000		N/S 1:	0.098
Southbound	Through	3.00	4,800	374	0.086	*	N/S 2:	0.119 *
	Left	1.00	1,600	35	0.022		E/W 1:	0.118 *
	Right	0.00	0	31	0.000		E/W 2:	0.107
Westbound	Through	3.00	4,800	438	0.098			
	Left	1.00	1,600	35	0.022	*	V/C Ratio:	0.237
	Right	0.00	0	28	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	338	0.076		ITS:	0.000
	Left	1.00	1,600	52	0.033	*		
	Right	0.00	0	21	0.000		ICU:	0.337
Eastbound	Through	3.00	4,800	441	0.096	*		
	Left	1.00	1,600	14	0.009		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.427 *
Southbound	Through	3.00	4,800	695	0.145	N/S 2:	0.145
	Left	1.00	1,600	350	0.219 *	E/W 1:	0.050
	Right	0.00	0	0	0.000	E/W 2:	0.251 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.678
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	664	0.208 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	80	0.050	ICU:	0.778
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	724	0.251 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.12	1,798	269	0.056	N/S 1:	0.222 *
Southbound	Through	3.88	6,202	928	0.150	N/S 2:	0.189
	Left	1.00	1,600	30	0.019 *	E/W 1:	0.189 *
	Right	2.00	3,200	162	0.041	E/W 2:	0.000
Westbound	Through	1.00	1,600	113	0.071 *		
	Left	1.00	1,600	97	0.061	V/C Ratio:	0.411
	Right	0.00	0	194	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,432	0.203 *	ITS:	0.000
	Left	1.00	1,600	62	0.039		
	Right	0.00	1,600	189	0.118 *	ICU:	0.511
Eastbound	Through	2.47	2,346	197	0.084		
	Left	1.53	2,208	206	0.093	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	158	0.053	N/S 1:	0.366 *
Southbound	Through	2.00	3,200	569	0.178	N/S 2:	0.231
	Left	1.00	1,600	293	0.183 *	E/W 1:	0.100 *
	Right	1.00	1,600	173	0.017	E/W 2:	0.063
Westbound	Through	2.00	3,200	36	0.011		
	Left	1.00	1,600	68	0.043 *	V/C Ratio:	0.466
	Right	1.00	1,600	23	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	585	0.183 *	ITS:	0.000
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	28	0.000	ICU:	0.566
Eastbound	Through	2.00	3,200	155	0.057 *		
	Left	1.00	1,600	74	0.046	LOS:	A

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	20.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.380

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	148	54	200	234	68	231
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]	148	54	200	234	68	231
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	14	50	59	17	58
Total Analysis Volume [veh/h]	148	54	200	234	68	231
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.38	0.07	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	20.83	16.56	0.00	0.00	8.40	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh]	2.32	2.32	0.00	0.00	0.19	0.00
95th-Percentile Queue Length [ft]	58.10	58.10	0.00	0.00	4.82	0.00
d_A, Approach Delay [s/veh]	19.69		0.00		1.91	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.87					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	165	125	128	117	111	125
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]	165	125	128	117	111	125
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	31	32	29	28	31
Total Analysis Volume [veh/h]	165	125	128	117	111	125
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.36	0.15	0.00	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	18.84	15.30	0.00	0.00	7.97	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh]	2.80	2.80	0.00	0.00	0.27	0.00
95th-Percentile Queue Length [ft]	69.96	69.96	0.00	0.00	6.87	0.00
d_A, Approach Delay [s/veh]	17.31		0.00		3.75	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	7.66					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	91	101	148	79	79	145
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]	91	101	148	79	79	145
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	25	37	20	20	36
Total Analysis Volume [veh/h]	91	101	148	79	79	145
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.15	0.17
d_M, Delay for Movement [s/veh]	7.88	0.00	0.00	0.00	14.51	11.69
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.50	0.50	0.00	0.00	1.40	1.40
95th-Percentile Queue Length [ft]	12.49	12.49	0.00	0.00	35.10	35.10
d_A, Approach Delay [s/veh]	3.73		0.00		12.68	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	5.53					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	2,216.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	4.552

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	45	134	302	1473	1179	117
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]	45	134	302	1473	1179	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	34	76	368	295	29
Total Analysis Volume [veh/h]	45	134	302	1473	1179	117
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	4.55	0.30	0.57	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	2216.59	1860.38	20.37	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh]	20.96	20.96	3.53	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	524.08	524.08	88.21	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	1949.93		3.47		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	109.29					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	75.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.724

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	108	0	0	0	80	161	359	0	136	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	0	0	0	80	161	359	0	136	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	0	0	0	20	40	90	0	34	0	0	0
Total Analysis Volume [veh/h]	108	0	0	0	80	161	359	0	136	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.72	0.00	0.00	0.00	0.35	0.15	0.22	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	75.30	64.19	0.00	0.00	28.70	8.90	7.85	0.00	0.00	7.49	0.00	0.00
Movement LOS	F	F			D	A	A		A	A	A	A
95th-Percentile Queue Length [veh]	4.29	4.29	0.00	0.00	1.48	0.52	0.85	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	107.29	107.29	0.00	0.00	36.96	13.01	21.19	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	75.30			15.47			5.69			2.50		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	17.39											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.175

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	268	123	2	44	109	3
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]	268	123	2	44	109	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	31	1	11	27	1
Total Analysis Volume [veh/h]	268	123	2	44	109	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.17	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.09	0.00	12.03	11.31
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.12	0.12	0.65	0.65
95th-Percentile Queue Length [ft]	0.00	0.00	3.07	3.07	16.21	16.21
d_A, Approach Delay [s/veh]	0.00		0.35		12.01	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.48					
Intersection LOS	B					

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	117	0.000	N/S 1:	0.318 *
Southbound	Through	2.00	3,200	719	0.261	N/S 2:	0.304
	Left	1.00	1,600	169	0.106 *	E/W 1:	0.248
	Right	1.00	1,600	112	0.017	E/W 2:	0.353 *
Westbound	Through	2.00	3,200	944	0.295 *		
	Left	1.00	1,600	147	0.092	V/C Ratio:	0.671
	Right	0.00	0	64	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	613	0.212 *	ITS:	0.000
	Left	1.00	1,600	69	0.043		
	Right	1.00	1,600	83	0.030	ICU:	0.771
Eastbound	Through	2.00	3,200	500	0.156		
	Left	1.00	1,600	92	0.058 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	103	0.000	N/S 1:	0.445 *
Southbound	Through	2.00	3,200	836	0.293	N/S 2:	0.357
	Left	1.00	1,600	198	0.124 *	E/W 1:	0.418 *
	Right	1.00	1,600	194	0.059	E/W 2:	0.289
Westbound	Through	2.00	3,200	699	0.218		
	Left	1.00	1,600	157	0.098 *	V/C Ratio:	0.863
	Right	0.00	0	108	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	919	0.321 *	ITS:	0.000
	Left	1.00	1,600	102	0.064		
	Right	1.00	1,600	106	0.034	ICU:	0.963
Eastbound	Through	2.00	3,200	1,023	0.320 *		
	Left	1.00	1,600	114	0.071	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	152	0.000	N/S 1:	0.237
Southbound	Through	2.00	3,200	695	0.265 *	N/S 2:	0.300 *
	Left	1.00	1,600	97	0.061	E/W 1:	0.276
	Right	0.00	0	82	0.000	E/W 2:	0.364 *
Westbound	Through	2.00	3,200	892	0.304 *		
	Left	1.00	1,600	132	0.083	V/C Ratio:	0.664
	Right	0.00	0	44	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	519	0.176	ITS:	0.000
	Left	1.00	1,600	56	0.035 *		
	Right	0.00	0	88	0.000	ICU:	0.764
Eastbound	Through	2.00	3,200	530	0.193		
	Left	1.00	1,600	96	0.060 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	127	0.000	N/S 1:	0.360 *
Southbound	Through	2.00	3,200	755	0.276	N/S 2:	0.329
	Left	1.00	1,600	108	0.068 *	E/W 1:	0.534 *
	Right	0.00	0	106	0.000	E/W 2:	0.345
Westbound	Through	2.00	3,200	708	0.254		
	Left	1.00	1,600	96	0.060 *	V/C Ratio:	0.894
	Right	0.00	0	50	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	884	0.292 *	ITS:	0.000
	Left	1.00	1,600	84	0.053		
	Right	0.00	0	128	0.000	ICU:	0.994
Eastbound	Through	2.00	3,200	1,390	0.474 *		
	Left	1.00	1,600	146	0.091	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	76	0.000	N/S 1:	0.295
Southbound	Through	2.00	3,200	1,312	0.434 *	N/S 2:	0.495 *
	Left	1.00	1,600	71	0.044	E/W 1:	0.289
	Right	0.00	0	119	0.000	E/W 2:	0.355 *
Westbound	Through	2.00	3,200	837	0.299 *		
	Left	1.00	1,600	171	0.107	V/C Ratio:	0.850
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	762	0.251	ITS:	0.000
	Left	1.00	1,600	98	0.061 *		
	Right	0.00	0	152	0.000	ICU:	0.950
Eastbound	Through	2.00	3,200	430	0.182		
	Left	1.00	1,600	90	0.056 *	LOS:	E

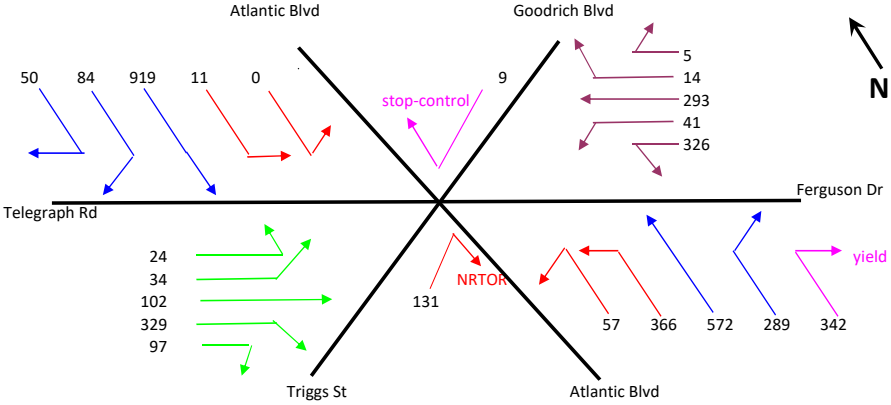
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	32	0.000	N/S 1:	0.468 *
Southbound	Through	2.00	3,200	1,255	0.402	N/S 2:	0.456
	Left	1.00	1,600	66	0.041 *	E/W 1:	0.491 *
	Right	0.00	0	75	0.000	E/W 2:	0.291
Westbound	Through	2.00	3,200	500	0.180		
	Left	1.00	1,600	73	0.046 *	V/C Ratio:	0.959
	Right	0.00	0	88	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,277	0.427 *	ITS:	0.000
	Left	1.00	1,600	87	0.054		
	Right	0.00	0	228	0.000	ICU:	1.059
Eastbound	Through	2.00	3,200	1,197	0.445 *		
	Left	1.00	1,600	178	0.111	LOS:	F

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future without Project Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{57 + 366}{2} = 212$ or

Southbound Left: $\frac{11 + 0}{1} = 11$ or

Northbound Right: 131

Critical Volume #1 (CV1): **212**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{572 + 289}{3} = 287$ or

Southbound Through + Right $\frac{919 + 84 + 50}{3} = 351$

Critical Volume #2 (CV2): **351**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{326 + 41}{1} = 367$ or

Westbound Through + Right: $\frac{293 + 14 + 5}{2} = 156$ or

Westbound Right: 14 + 5 = 19

Critical Volume #3 (CV3): **367**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{24 + 34 + 102}{1} = 160$ or

Eastbound Through: $\frac{329}{3} = 109.7$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **160**

Critical Volume: 212 + 351 + 367 + 160 = **1,090**

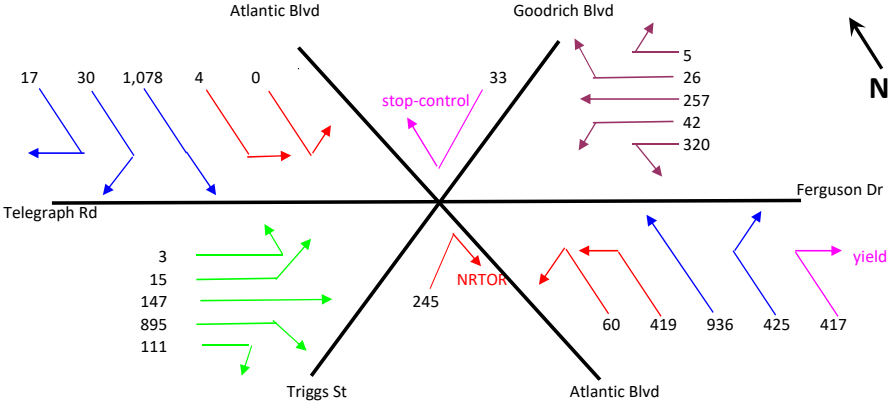
Intersection V/C: $\frac{1,090}{1,375} =$ **0.792**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.792** **Intersection LOS:** **C**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future without Project Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{60 + 419}{2} = 240$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 245

Critical Volume #1 (CV1): **245**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{936 + 425}{3} = 454$ or

Southbound Through + Right $\frac{1,078 + 30 + 17}{3} = 375$

Critical Volume #2 (CV2): **454**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{320 + 42}{1} = 362$ or

Westbound Through + Right: $\frac{257 + 26 + 5}{2} = 144$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **362**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 15 + 147}{1} = 165$ or

Eastbound Through: $\frac{895}{3} = 298.3$ or

Eastbound Right: 111

Critical Volume #4 (CV4): **298**

Critical Volume: 245 + 454 + 362 + 298 = **1,359**

Intersection V/C: $\frac{1,359}{1,375} =$ **0.988**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.988** **Intersection LOS:** **E**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	255	0.000		N/S 1:	0.390	
Southbound	Through	2.00	3,200	1,300	0.486	*	N/S 2:	0.507	*
	Left	1.00	1,600	214	0.134		E/W 1:	0.097	
	Right	0.00	1,600	247	0.154	*	E/W 2:	0.194	*
Westbound	Through	2.00	1,600	124	0.118				
	Left	0.00	1,600	65	0.041		V/C Ratio:	0.701	
	Right	0.00	0	79	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	741	0.256		ITS:	0.000	
	Left	1.00	1,600	33	0.021	*			
	Right	0.00	0	9	0.000		ICU:	0.801	
Eastbound	Through	2.00	1,600	17	0.056				
	Left	0.00	1,600	64	0.040	*	LOS:	D	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	212	0.000		N/S 1:	0.510	*
Southbound	Through	2.00	3,200	1,375	0.496		N/S 2:	0.502	
	Left	1.00	1,600	154	0.096	*	E/W 1:	0.343	*
	Right	0.00	1,600	165	0.103		E/W 2:	0.281	
Westbound	Through	2.00	1,600	29	0.054				
	Left	0.00	1,600	58	0.036	*	V/C Ratio:	0.853	
	Right	0.00	0	44	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	1,280	0.414	*	ITS:	0.000	
	Left	1.00	1,600	9	0.006				
	Right	0.00	0	29	0.000		ICU:	0.953	
Eastbound	Through	2.00	1,600	177	0.307	*			
	Left	0.00	1,600	285	0.178		LOS:	E	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	14	0.000	N/S 1:	0.221
Southbound	Through	3.00	4,800	1,427	0.300 *	N/S 2:	0.355 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.024 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.379
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,061	0.221	ITS:	0.000
	Left	1.00	1,600	88	0.055 *		
	Right	0.00	0	39	0.000	ICU:	0.479
Eastbound	Through	1.00	1,600	0	0.024 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.291 *
Southbound	Through	3.00	4,800	1,279	0.268	N/S 2:	0.282
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.049 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.340
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,395	0.291 *	ITS:	0.000
	Left	1.00	1,600	22	0.014		
	Right	0.00	0	78	0.000	ICU:	0.440
Eastbound	Through	1.00	1,600	0	0.049 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	302	0.059		N/S 1:	0.299 *
Southbound	Through	2.00	3,200	832	0.260		N/S 2:	0.287
	Left	1.00	1,600	202	0.126	*	E/W 1:	0.170
	Right	0.00	0	172	0.000		E/W 2:	0.402 *
Westbound	Through	3.00	4,800	1,140	0.273	*		
	Left	1.00	1,600	58	0.036		V/C Ratio:	0.701
	Right	0.00	0	19	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	535	0.173	*	ITS:	0.000
	Left	1.00	1,600	43	0.027			
	Right	0.00	0	35	0.000		ICU:	0.801
Eastbound	Through	3.00	4,800	609	0.134			
	Left	1.00	1,600	207	0.129	*	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	316	0.046		N/S 1:	0.491 *
Southbound	Through	2.00	3,200	812	0.254		N/S 2:	0.272
	Left	1.00	1,600	323	0.202	*	E/W 1:	0.265
	Right	0.00	0	203	0.000		E/W 2:	0.350 *
Westbound	Through	3.00	4,800	747	0.198	*		
	Left	1.00	1,600	54	0.034		V/C Ratio:	0.841
	Right	0.00	0	68	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	857	0.289	*	ITS:	0.000
	Left	1.00	1,600	28	0.018			
	Right	0.00	0	39	0.000		ICU:	0.941
Eastbound	Through	3.00	4,800	1,069	0.231			
	Left	1.00	1,600	243	0.152	*	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.409 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.251 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	451	0.141 *		
	Left	1.00	1,600	223	0.139	V/C Ratio:	0.660
	Right	1.00	1,600	593	0.301	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,178	0.409 *		
	Right	3.00	4,800	1,313	0.000	ICU:	0.760
Eastbound	Through	2.00	3,200	352	0.110 *		
	Left	0.00	0	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.448 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.514 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	815	0.255		
	Left	1.00	1,600	537	0.336 *	V/C Ratio:	0.962
	Right	0.78	1,243	501	0.235	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.22	3,201	1,433	0.448 *		
	Right	3.00	4,800	2,027	0.000	ICU:	1.062
Eastbound	Through	2.00	3,200	571	0.178 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	65	0.000	N/S 1:	0.140 *
Southbound	Through	1.00	1,600	61	0.043 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.261
	Right	0.00	0	9	0.000	E/W 2:	0.306 *
Westbound	Through	2.00	3,200	383	0.123 *		
	Left	2.00	2,880	240	0.083	V/C Ratio:	0.446
	Right	0.00	0	11	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	16	0.008	ITS:	0.000
	Left	1.81	2,601	252	0.097 *		
	Right	0.00	0	67	0.000	ICU:	0.546
Eastbound	Through	2.00	3,200	504	0.178		
	Left	1.00	1,600	293	0.183 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	320	0.148	N/S 1:	0.267 *
Southbound	Through	1.00	1,600	240	0.164 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.407 *
	Right	0.00	0	7	0.000	E/W 2:	0.320
Westbound	Through	2.00	3,200	685	0.216		
	Left	2.00	2,880	317	0.110 *	V/C Ratio:	0.674
	Right	0.00	1,600	28	0.018	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	0.000
	Left	1.74	2,503	259	0.103 *		
	Right	0.00	0	124	0.000	ICU:	0.774
Eastbound	Through	2.00	3,200	827	0.297 *		
	Left	1.00	1,600	167	0.104	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	54	0.000	N/S 1:	0.012 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	19	0.012 *	E/W 1:	0.084
	Right	1.00	1,600	52	0.021	E/W 2:	0.195 *
Westbound	Through	3.00	4,800	676	0.141 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.207
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.307
Eastbound	Through	2.00	3,200	269	0.084		
	Left	2.00	2,880	155	0.054 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	342	0.053	N/S 1:	0.071 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.053
	Left	1.00	1,600	113	0.071 *	E/W 1:	0.168
	Right	1.00	1,600	151	0.024	E/W 2:	0.218 *
Westbound	Through	3.00	4,800	528	0.110 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.289
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.389
Eastbound	Through	2.00	3,200	536	0.168		
	Left	2.00	2,880	310	0.108 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	16	0.000	N/S 1:	0.015 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	24	0.015 *	E/W 1:	0.047
	Right	0.00	0	97	0.000	E/W 2:	0.203 *
Westbound	Through	3.00	4,800	715	0.169 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.218
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.318
Eastbound	Through	3.00	4,800	225	0.047		
	Left	1.00	1,600	54	0.034 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	105	0.059	N/S 1:	0.116 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.059
	Left	1.00	1,600	185	0.116 *	E/W 1:	0.134
	Right	0.00	0	64	0.000	E/W 2:	0.143 *
Westbound	Through	3.00	4,800	559	0.130 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.259
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.359
Eastbound	Through	3.00	4,800	644	0.134		
	Left	1.00	1,600	21	0.013 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.48	776	40	0.032	N/S 1:	0.057 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.032
	Left	1.52	2,182	125	0.057 *	E/W 1:	0.043
	Right	0.00	0	186	0.000	E/W 2:	0.242 *
Westbound	Through	3.00	4,800	787	0.203 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.299
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.399
Eastbound	Through	3.00	4,800	197	0.041		
	Left	1.00	1,600	62	0.039 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.42	678	79	0.089	N/S 1:	0.130 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.089
	Left	1.58	2,270	294	0.130 *	E/W 1:	0.165
	Right	0.00	0	122	0.000	E/W 2:	0.195 *
Westbound	Through	3.00	4,800	552	0.140 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.325
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.425
Eastbound	Through	3.00	4,800	794	0.165		
	Left	1.00	1,600	88	0.055 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.129 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.404 *
	Right	0.00	0	10	0.000	E/W 2:	0.167
Westbound	Through	3.00	4,800	790	0.167		
	Left	1.00	1,600	541	0.338 *	V/C Ratio:	0.533
	Right	1.00	1,600	325	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.112 *	ITS:	0.000
	Left	0.00	1,600	174	0.109		
	Right	0.00	0	35	0.000	ICU:	0.633
Eastbound	Through	3.00	4,800	282	0.066 *		
	Left	1.00	1,600	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.135 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.609 *
	Right	0.00	0	56	0.000	E/W 2:	0.147
Westbound	Through	3.00	4,800	538	0.124		
	Left	1.00	1,600	653	0.408 *	V/C Ratio:	0.744
	Right	1.00	1,600	230	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.074 *	ITS:	0.000
	Left	0.00	1,600	106	0.066		
	Right	0.00	0	55	0.000	ICU:	0.844
Eastbound	Through	3.00	4,800	908	0.201 *		
	Left	1.00	1,600	36	0.023	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	555	0.289		N/S 1:	0.391 *
Southbound	Through	2.00	3,200	750	0.234		N/S 2:	0.333
	Left	1.00	1,600	15	0.009	*	E/W 1:	0.209
	Right	0.00	0	43	0.000		E/W 2:	0.252 *
Westbound	Through	2.00	3,200	578	0.194	*		
	Left	1.00	1,600	273	0.171		V/C Ratio:	0.643
	Right	0.00	0	169	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,052	0.382	*	ITS:	0.000
	Left	2.00	2,880	128	0.044			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.743
Eastbound	Through	2.00	3,200	121	0.038			
	Left	2.00	2,880	167	0.058	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	579	0.245		N/S 1:	0.459 *
Southbound	Through	2.00	3,200	659	0.206		N/S 2:	0.296
	Left	1.00	1,600	48	0.030	*	E/W 1:	0.296 *
	Right	0.00	0	42	0.000		E/W 2:	0.284
Westbound	Through	2.00	3,200	493	0.167			
	Left	1.00	1,600	228	0.143	*	V/C Ratio:	0.755
	Right	0.00	0	285	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,087	0.429	*	ITS:	0.000
	Left	2.00	2,880	146	0.051			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.855
Eastbound	Through	2.00	3,200	490	0.153	*		
	Left	2.00	2,880	337	0.117		LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	76	0.040	N/S 1:	0.381
Southbound	Through	2.00	3,200	1,259	0.393 *	N/S 2:	0.397 *
	Left	1.00	1,600	80	0.050	E/W 1:	0.293 *
	Right	1.00	1,600	230	0.119	E/W 2:	0.229
Westbound	Through	2.00	3,200	682	0.213		
	Left	2.00	2,880	638	0.222 *	V/C Ratio:	0.690
	Right	1.00	1,600	465	0.069	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,052	0.331	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	114	0.071 *	ICU:	0.790
Eastbound	Through	2.00	3,200	174	0.054		
	Left	1.00	1,600	25	0.016	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	67	0.030	N/S 1:	0.349 *
Southbound	Through	2.00	3,200	1,091	0.341	N/S 2:	0.343
	Left	1.00	1,600	111	0.069 *	E/W 1:	0.336 *
	Right	1.00	1,600	359	0.190	E/W 2:	0.213
Westbound	Through	2.00	3,200	342	0.107		
	Left	2.00	2,880	344	0.119 *	V/C Ratio:	0.685
	Right	1.00	1,600	450	0.162	Loss Time:	0.100
Northbound	Through	2.00	3,200	892	0.280 *	ITS:	0.000
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	241	0.151	ICU:	0.785
Eastbound	Through	2.00	3,200	693	0.217 *		
	Left	1.00	1,600	37	0.023	LOS:	C

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.040
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.232 *
	Left	0.00	0	0	0.000	E/W 1:	0.554 *
	Right	0.00	0	0	0.000	E/W 2:	0.309
Westbound	Through	2.00	3,200	990	0.309		
	Left	1.00	1,600	541	0.338 *	V/C Ratio:	0.786
	Right	0.03	48	10	0.040	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.97	2,837	659	0.232 *		
	Right	0.00	0	175	0.000	ICU:	0.886
Eastbound	Through	2.00	3,200	515	0.216 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.012
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.181 *
	Left	0.00	0	0	0.000	E/W 1:	0.680 *
	Right	0.00	0	0	0.000	E/W 2:	0.179
Westbound	Through	2.00	3,200	574	0.179		
	Left	1.00	1,600	483	0.302 *	V/C Ratio:	0.861
	Right	0.12	184	30	0.012	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.88	2,714	491	0.181 *		
	Right	0.00	0	273	0.000	ICU:	0.961
Eastbound	Through	2.00	3,200	937	0.378 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.387
Southbound	Through	1.00	1,600	902	0.564 *	N/S 2:	0.564 *
	Left	2.00	2,880	664	0.231	E/W 1:	0.000
	Right	3.00	4,800	1,041	0.102 *	E/W 2:	0.102 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.666
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	744	0.156	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.766
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.586
Southbound	Through	1.00	1,600	1,530	0.956 *	N/S 2:	0.956 *
	Left	2.00	2,880	1,077	0.374	E/W 1:	0.000 *
	Right	3.00	4,800	899	0.000	E/W 2:	0.000
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000 *	V/C Ratio:	0.956
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	991	0.212	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.056
Eastbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.195 *
Southbound	Through	2.00	3,200	456	0.146	N/S 2:	0.149
	Left	2.00	2,880	202	0.070 *	E/W 1:	0.185 *
	Right	1.96	3,135	484	0.119	E/W 2:	0.000
Westbound	Through	0.04	65	10	0.154		
	Left	1.00	1,600	263	0.164 *	V/C Ratio:	0.380
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	566	0.125 *	ITS:	0.000
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.480
Eastbound	Through	2.00	3,200	61	0.021 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	19	0.000	N/S 1:	0.261 *
Southbound	Through	2.00	3,200	795	0.254	N/S 2:	0.256
	Left	2.00	2,880	300	0.104 *	E/W 1:	0.087 *
	Right	1.86	2,971	182	0.009	E/W 2:	0.000
Westbound	Through	0.14	229	14	0.061		
	Left	1.00	1,600	105	0.066 *	V/C Ratio:	0.348
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	718	0.157 *	ITS:	0.000
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	18	0.000	ICU:	0.448
Eastbound	Through	2.00	3,200	31	0.021 *		
	Left	0.00	1,600	18	0.011	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	156	0.069	N/S 1:	0.151
Southbound	Through	2.00	3,200	661	0.207 *	N/S 2:	0.238 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.152
	Right	0.00	0	38	0.000	E/W 2:	0.178 *
Westbound	Through	3.00	4,800	548	0.122 *		
	Left	1.00	1,600	53	0.033	V/C Ratio:	0.416
	Right	0.00	0	39	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	599	0.133	ITS:	0.000
	Left	1.00	1,600	50	0.031 *		
	Right	0.00	0	77	0.000	ICU:	0.516
Eastbound	Through	3.00	4,800	493	0.119		
	Left	1.00	1,600	90	0.056 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	192	0.092	N/S 1:	0.194
Southbound	Through	2.00	3,200	1,126	0.352 *	N/S 2:	0.411 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.189
	Right	0.00	0	60	0.000	E/W 2:	0.244 *
Westbound	Through	3.00	4,800	844	0.188 *		
	Left	1.00	1,600	88	0.055	V/C Ratio:	0.655
	Right	0.00	0	54	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	792	0.176	ITS:	0.000
	Left	1.00	1,600	95	0.059 *		
	Right	0.00	0	62	0.000	ICU:	0.755
Eastbound	Through	3.00	4,800	579	0.134		
	Left	1.00	1,600	89	0.056 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.125
Southbound	Through	3.00	4,800	529	0.115 *	N/S 2:	0.167 *
	Left	1.00	1,600	45	0.028	E/W 1:	0.115
	Right	0.00	0	25	0.000	E/W 2:	0.149 *
Westbound	Through	3.00	4,800	627	0.136 *		
	Left	1.00	1,600	40	0.025	V/C Ratio:	0.316
	Right	0.00	0	19	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	448	0.097	ITS:	0.000
	Left	1.00	1,600	83	0.052 *		
	Right	0.00	0	85	0.000	ICU:	0.416
Eastbound	Through	3.00	4,800	348	0.090		
	Left	1.00	1,600	21	0.013 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	35	0.000	N/S 1:	0.184
Southbound	Through	3.00	4,800	620	0.136 *	N/S 2:	0.207 *
	Left	1.00	1,600	62	0.039	E/W 1:	0.190 *
	Right	0.00	0	36	0.000	E/W 2:	0.179
Westbound	Through	3.00	4,800	699	0.153		
	Left	1.00	1,600	31	0.019 *	V/C Ratio:	0.397
	Right	0.00	0	31	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	666	0.145	ITS:	0.000
	Left	1.00	1,600	113	0.071 *		
	Right	0.00	0	101	0.000	ICU:	0.497
Eastbound	Through	3.00	4,800	719	0.171 *		
	Left	1.00	1,600	42	0.026	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.265 *
Southbound	Through	3.00	4,800	1,247	0.260		N/S 2:	0.260
	Left	1.00	1,600	92	0.058	*	E/W 1:	0.073
	Right	0.00	0	0	0.000		E/W 2:	0.242 *
Westbound	Through	0.00	0	0	0.000	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.507
	Right [1]	1.00	1,600	0	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	661	0.207	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	1.00	1,600	116	0.073		ICU:	0.607
Eastbound	Through	0.00	0	0	0.000			
	Left	2.00	2,880	696	0.242	*	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.554 *
Southbound	Through	3.00	4,800	1,046	0.218		N/S 2:	0.218
	Left	1.00	1,600	234	0.146	*	E/W 1:	0.018
	Right	0.00	0	0	0.000		E/W 2:	0.085 *
Westbound	Through	0.00	0	0	0.000	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.639
	Right [1]	1.00	1,600	0	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,307	0.408	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	1.00	1,600	29	0.018		ICU:	0.739
Eastbound	Through	0.00	0	0	0.000			
	Left	2.00	2,880	244	0.085	*	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	856	0.139	N/S 1:	0.263 *
Southbound	Through	3.00	4,800	717	0.149	N/S 2:	0.205
	Left	1.00	1,600	72	0.045 *	E/W 1:	0.344 *
	Right	2.00	3,200	281	0.065	E/W 2:	0.000
Westbound	Through	1.00	1,600	284	0.178 *		
	Left	1.00	1,600	156	0.098	V/C Ratio:	0.607
	Right	0.00	0	327	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,419	0.218 *	ITS:	0.000
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	132	0.000	ICU:	0.707
Eastbound	Through	3.00	4,800	665	0.166 *		
	Left	1.00	1,600	205	0.128	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	332	0.000	N/S 1:	0.238
Southbound	Through	4.00	6,400	1,336	0.209 *	N/S 2:	0.239 *
	Left	1.00	1,600	61	0.038	E/W 1:	0.481 *
	Right	2.00	3,200	537	0.149	E/W 2:	0.000
Westbound	Through	1.00	1,600	202	0.126		
	Left	1.00	1,600	312	0.195 *	V/C Ratio:	0.720
	Right	0.00	0	236	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,362	0.200	ITS:	0.000
	Left	1.00	1,600	48	0.030 *		
	Right	0.00	1,600	458	0.286 *	ICU:	0.820
Eastbound	Through	2.58	2,520	587	0.233		
	Left	1.42	2,052	531	0.259	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	790	0.389	N/S 1:	0.513 *
Southbound	Through	2.00	3,200	900	0.281	N/S 2:	0.441
	Left	1.00	1,600	308	0.193 *	E/W 1:	0.211
	Right	1.00	1,600	394	0.150 *	E/W 2:	0.254 *
Westbound	Through	2.00	3,200	215	0.067		
	Left	1.00	1,600	197	0.123	V/C Ratio:	0.767
	Right	1.00	1,600	110	0.007	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,023	0.320 *	ITS:	0.000
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	33	0.000	ICU:	0.867
Eastbound	Through	2.00	3,200	247	0.088		
	Left	1.00	1,600	167	0.104 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	318	0.049	N/S 1:	0.475 *
Southbound	Through	2.00	3,200	1,163	0.363	N/S 2:	0.398
	Left	1.00	1,600	286	0.179 *	E/W 1:	0.374 *
	Right	1.00	1,600	185	0.026	E/W 2:	0.175
Westbound	Through	2.00	3,200	84	0.026		
	Left	1.00	1,600	72	0.045 *	V/C Ratio:	0.849
	Right	1.00	1,600	202	0.104	Loss Time:	0.100
Northbound	Through	2.00	3,200	946	0.296 *	ITS:	0.000
	Left	1.00	1,600	56	0.035		
	Right	0.00	0	115	0.000	ICU:	0.949
Eastbound	Through	2.00	3,200	937	0.329 *		
	Left	1.00	1,600	239	0.149	LOS:	E

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	4	3	215	15	2	142
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]	4	3	215	15	2	142
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	54	4	1	36
Total Analysis Volume [veh/h]	4	3	215	15	2	142
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.76	9.46	0.00	0.00	7.69	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.76	0.76	0.00	0.00	0.11	0.00
d_A, Approach Delay [s/veh]	10.20		0.00		0.11	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.23					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	3	17	192	17	52	147
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]	3	17	192	17	52	147
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	4	48	4	13	37
Total Analysis Volume [veh/h]	3	17	192	17	52	147
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	11.74	9.41	0.00	0.00	7.75	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.00	0.00	0.12	0.00
95th-Percentile Queue Length [ft]	1.98	1.98	0.00	0.00	2.98	0.00
d_A, Approach Delay [s/veh]	9.76		0.00		2.02	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.40					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.100

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	82	151	87	149	51	64
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]	82	151	87	149	51	64
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	38	22	37	13	16
Total Analysis Volume [veh/h]	82	151	87	149	51	64
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.10	0.07
d_M, Delay for Movement [s/veh]	7.88	0.00	0.00	0.00	13.17	10.20
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.63	0.63	0.00	0.00	0.62	0.62
95th-Percentile Queue Length [ft]	15.84	15.84	0.00	0.00	15.48	15.48
d_A, Approach Delay [s/veh]	2.77		0.00		11.52	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	2	10	117	432	671	47
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]	2	10	117	432	671	47
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	3	29	108	168	12
Total Analysis Volume [veh/h]	2	10	117	432	671	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.13	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	25.97	10.67	9.72	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.08	0.08	0.46	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	2.05	2.05	11.46	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.22		2.07		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.01					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	1	0	0	35	137	130	0	31	0	0	0
Total Analysis Volume [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	1.06	0.50	0.32	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	161.80	11.64	8.26	0.00	0.00	7.46	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	36.52	36.52	0.00	0.00	7.83	2.92	1.40	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	913.06	913.06	0.00	0.00	195.67	73.08	34.90	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			42.42			6.65			2.49		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	1706.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	93	2	0	28	1	0
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]	93	2	0	28	1	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	1	0	7	0	0
Total Analysis Volume [veh/h]	93	2	0	28	1	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	9.13	8.74
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.09	0.09
d_A, Approach Delay [s/veh]	0.00		0.00		9.13	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.120

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	57	22	161	70	24	323
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]	57	22	161	70	24	323
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	6	40	18	6	81
Total Analysis Volume [veh/h]	57	22	161	70	24	323
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.03	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	13.69	10.39	0.00	0.00	7.74	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.51	0.51	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft]	12.68	12.68	0.00	0.00	1.37	0.00
d_A, Approach Delay [s/veh]	12.77		0.00		0.54	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.82					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.129

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	65	113	158	20	42	266
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]	65	113	158	20	42	266
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	28	40	5	11	67
Total Analysis Volume [veh/h]	65	113	158	20	42	266
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.13	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	13.98	10.92	0.00	0.00	7.66	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.03	1.03	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft]	25.72	25.72	0.00	0.00	2.32	0.00
d_A, Approach Delay [s/veh]	12.04		0.00		1.04	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.71					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.310

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	46	128	141	100	178	152
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	128	141	100	178	152
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	32	35	25	45	38
Total Analysis Volume [veh/h]	46	128	141	100	178	152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.31	0.18
d_M, Delay for Movement [s/veh]	7.81	0.00	0.00	0.00	16.24	14.21
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.45	0.45	0.00	0.00	2.70	2.70
95th-Percentile Queue Length [ft]	11.30	11.30	0.00	0.00	67.39	67.39
d_A, Approach Delay [s/veh]	2.07		0.00		15.31	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	7.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	51.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.374

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	42	70	101	820	802	30
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]	42	70	101	820	802	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	18	25	205	201	8
Total Analysis Volume [veh/h]	42	70	101	820	802	30
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.37	0.12	0.13	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	51.40	25.34	10.18	0.00	0.00	0.00
Movement LOS	F	D	B	A	A	A
95th-Percentile Queue Length [veh]	2.47	2.47	0.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	61.82	61.82	10.84	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	35.11		1.12		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	2.66					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	2	0	0	11	19	248	0	109	0	0	0
Total Analysis Volume [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.38	0.00	0.00	3.47	0.07	0.61	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	1709.97	8.57	10.63	0.00	0.00	8.20	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	34.89	34.89	0.00	0.00	6.47	0.23	4.45	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	872.19	872.19	0.00	0.00	161.64	5.72	111.31	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			627.26			7.39			2.73		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1473.34											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	147	9	4	49	4	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	147	9	4	49	4	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	2	1	12	1	1
Total Analysis Volume [veh/h]	147	9	4	49	4	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.54	0.00	9.68	9.07
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.12	0.12	0.03	0.03
95th-Percentile Queue Length [ft]	0.00	0.00	2.90	2.90	0.81	0.81
d_A, Approach Delay [s/veh]	0.00		0.57		9.34	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.52					
Intersection LOS	A					

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	175	0.000		N/S 1:	0.417 *
Southbound	Through	2.00	3,200	769	0.295		N/S 2:	0.378
	Left	1.00	1,600	309	0.193	*	E/W 1:	0.357 *
	Right	1.00	1,600	242	0.055		E/W 2:	0.337
Westbound	Through	2.00	3,200	773	0.242			
	Left	1.00	1,600	177	0.111	*	V/C Ratio:	0.774
	Right	0.00	0	134	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	584	0.224	*	ITS:	0.000
	Left	1.00	1,600	133	0.083			
	Right	1.00	1,600	118	0.032		ICU:	0.874
Eastbound	Through	2.00	3,200	787	0.246	*		
	Left	1.00	1,600	152	0.095		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	197	0.000		N/S 1:	0.264
Southbound	Through	2.00	3,200	938	0.355	*	N/S 2:	0.410 *
	Left	1.00	1,600	114	0.071		E/W 1:	0.364 *
	Right	0.00	0	92	0.000		E/W 2:	0.350
Westbound	Through	2.00	3,200	691	0.245			
	Left	1.00	1,600	137	0.086	*	V/C Ratio:	0.774
	Right	0.00	0	68	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	548	0.193		ITS:	0.000
	Left	1.00	1,600	88	0.055	*		
	Right	0.00	0	142	0.000		ICU:	0.874
Eastbound	Through	2.00	3,200	747	0.278	*		
	Left	1.00	1,600	168	0.105		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

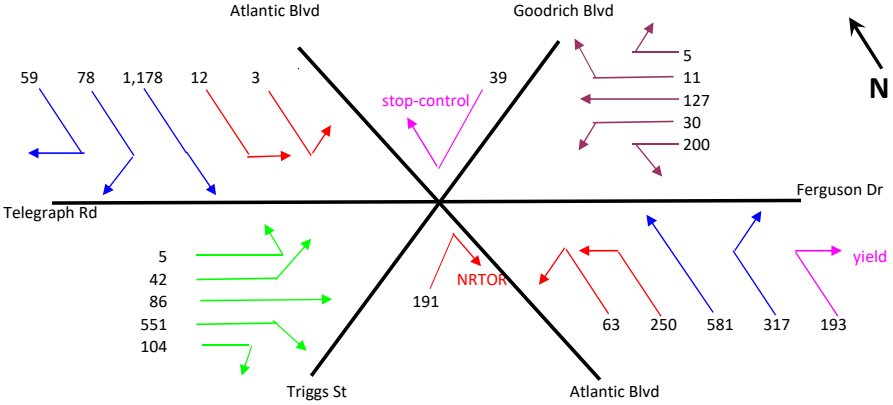
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	59	0.000		N/S 1:	0.326
Southbound	Through	2.00	3,200	864	0.288	*	N/S 2:	0.392 *
	Left	1.00	1,600	66	0.041		E/W 1:	0.273 *
	Right	0.00	0	105	0.000		E/W 2:	0.209
Westbound	Through	2.00	3,200	378	0.151			
	Left	1.00	1,600	96	0.060	*	V/C Ratio:	0.665
	Right	0.00	0	80	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	831	0.285		ITS:	0.000
	Left	1.00	1,600	167	0.104	*		
	Right	0.00	0	178	0.000		ICU:	0.765
Eastbound	Through	2.00	3,200	502	0.213	*		
	Left	1.00	1,600	93	0.058		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future without Project Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{63 + 250}{2} = 157$ or

Southbound Left: $\frac{12 + 3}{1} = 15$ or

Northbound Right: 191

Critical Volume #1 (CV1): **191**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{581 + 317}{3} = 299$ or

Southbound Through + Right $\frac{1,178 + 78 + 59}{3} = 438$

Critical Volume #2 (CV2): **438**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{200 + 30}{1} = 230$ or

Westbound Through + Right: $\frac{127 + 11 + 5}{2} = 72$ or

Westbound Right: 11 + 5 = 16

Critical Volume #3 (CV3): **230**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 42 + 86}{1} = 133$ or

Eastbound Through: $\frac{551}{3} = 183.7$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **184**

Critical Volume: 191 + 438 + 230 + 184 = **1,043**

Intersection V/C: $\frac{1,043}{1,375} =$ **0.758**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.758** **Intersection LOS:** **C**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	144	0.000		N/S 1:	0.349 *
Southbound	Through	2.00	3,200	946	0.341		N/S 2:	0.347
	Left	1.00	1,600	80	0.050	*	E/W 1:	0.098
	Right	0.00	1,600	101	0.063	*	E/W 2:	0.129 *
Westbound	Through	2.00	1,600	14	0.021			
	Left	0.00	1,600	19	0.012		V/C Ratio:	0.478
	Right	0.00	0	7	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	951	0.299	*	ITS:	0.000
	Left	1.00	1,600	10	0.006			
	Right	0.00	0	19	0.000		ICU:	0.578
Eastbound	Through	2.00	1,600	12	0.086			
	Left	0.00	1,600	106	0.066	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.202
Southbound	Through	3.00	4,800	974	0.203 *	N/S 2:	0.216 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.015 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.231
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	968	0.202	ITS:	0.000
	Left	1.00	1,600	20	0.013 *		
	Right	0.00	0	24	0.000	ICU:	0.331
Eastbound	Through	1.00	1,600	0	0.015 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	252	0.019		N/S 1:	0.320 *
Southbound	Through	2.00	3,200	523	0.163		N/S 2:	0.174
	Left	1.00	1,600	225	0.141	*	E/W 1:	0.178
	Right	0.00	0	205	0.000		E/W 2:	0.322 *
Westbound	Through	3.00	4,800	676	0.184	*		
	Left	1.00	1,600	46	0.029		V/C Ratio:	0.642
	Right	0.00	0	43	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	529	0.179	*	ITS:	0.000
	Left	1.00	1,600	17	0.011			
	Right	0.00	0	25	0.000		ICU:	0.742
Eastbound	Through	3.00	4,800	692	0.149			
	Left	1.00	1,600	221	0.138	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.399 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.411 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	497	0.155		
	Left	1.00	1,600	349	0.218 *	V/C Ratio:	0.810
	Right	1.00	1,600	813	0.399 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	911	0.316		
	Right	3.00	4,800	1,552	0.007	ICU:	0.910
Eastbound	Through	2.00	3,200	617	0.193 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	186	0.040		N/S 1:	0.196 *
Southbound	Through	1.00	1,600	126	0.097	*	N/S 2:	0.000
	Left	0.00	1,600	29	0.018		E/W 1:	0.477 *
	Right	0.00	0	13	0.000		E/W 2:	0.307
Westbound	Through	2.00	3,200	480	0.154			
	Left	2.00	2,880	310	0.108	*	V/C Ratio:	0.673
	Right	0.00	1,600	86	0.054		Loss Time:	0.100
Northbound	Through	2.00	1,600	9	0.006		ITS:	0.000
	Left	1.33	1,920	190	0.099	*		
	Right	0.00	0	72	0.000		ICU:	0.773
Eastbound	Through	2.00	3,200	1,108	0.369	*		
	Left	1.00	1,600	244	0.153		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.99	3,187	243	0.000		N/S 1:	0.085 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.000
	Left	1.01	1,452	123	0.085	*	E/W 1:	0.128
	Right	1.00	1,600	335	0.125	*	E/W 2:	0.341 *
Westbound	Through	3.00	4,800	590	0.123			
	Left	0.00	0	0	0.000		V/C Ratio:	0.426
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.526
Eastbound	Through	2.00	3,200	411	0.128			
	Left	2.00	2,880	622	0.216	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	239	0.135 *	N/S 1:	0.134
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.135 *
	Left	1.00	1,600	214	0.134	E/W 1:	0.098
	Right	0.00	0	131	0.000	E/W 2:	0.196 *
Westbound	Through	3.00	4,800	671	0.167 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.331
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.431
Eastbound	Through	3.00	4,800	471	0.098		
	Left	1.00	1,600	47	0.029 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.50	807	62	0.054	N/S 1:	0.085 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.054
	Left	1.50	2,154	184	0.085 *	E/W 1:	0.130
	Right	0.00	0	138	0.000	E/W 2:	0.249 *
Westbound	Through	3.00	4,800	838	0.204 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.334
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.434
Eastbound	Through	3.00	4,800	617	0.129		
	Left	1.00	1,600	72	0.045 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	17	0.000		N/S 1:	0.213	*
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000	
	Left	1.00	1,600	32	0.020		E/W 1:	0.501	*
	Right	0.00	0	57	0.000		E/W 2:	0.193	
Westbound	Through	3.00	4,800	758	0.170				
	Left	1.00	1,600	533	0.333	*	V/C Ratio:	0.714	
	Right	1.00	1,600	229	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	33	0.179	*	ITS:	0.000	
	Left	0.00	1,600	254	0.159				
	Right	0.00	0	65	0.000		ICU:	0.814	
Eastbound	Through	3.00	4,800	739	0.168	*			
	Left	1.00	1,600	36	0.023		LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	532	0.233 *	N/S 1:	0.333
Southbound	Through	2.00	3,200	428	0.134	N/S 2:	0.373 *
	Left	1.00	1,600	40	0.025	E/W 1:	0.213
	Right	0.00	0	35	0.000	E/W 2:	0.271 *
Westbound	Through	2.00	3,200	512	0.171 *		
	Left	1.00	1,600	191	0.119	V/C Ratio:	0.644
	Right	0.00	0	201	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	786	0.308	ITS:	0.000
	Left	2.00	2,880	404	0.140 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.744
Eastbound	Through	2.00	3,200	302	0.094		
	Left	2.00	2,880	287	0.100 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	143	0.089	N/S 1:	0.176
Southbound	Through	2.00	3,200	623	0.195 *	N/S 2:	0.261 *
	Left	1.00	1,600	33	0.021	E/W 1:	0.208
	Right	1.00	1,600	354	0.221 *	E/W 2:	0.230 *
Westbound	Through	2.00	3,200	484	0.151		
	Left	2.00	2,880	295	0.102	V/C Ratio:	0.491
	Right	1.00	1,600	332	0.105	Loss Time:	0.100
Northbound	Through	2.00	3,200	496	0.155	ITS:	0.000
	Left	1.00	1,600	105	0.066 *		
	Right [1]	1.00	1,600	150	0.094	ICU:	0.591
Eastbound	Through	2.00	3,200	339	0.106		
	Left	1.00	1,600	14	0.009 *	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.050
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.157 *
	Left	0.00	0	0	0.000		E/W 1:	0.422 *
	Right	0.00	0	0	0.000		E/W 2:	0.180
Westbound	Through	2.00	3,200	575	0.180			
	Left	1.00	1,600	294	0.184	*	V/C Ratio:	0.579
	Right	0.09	141	20	0.050		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.91	2,753	433	0.157	*		
	Right	0.00	0	202	0.000		ICU:	0.679
Eastbound	Through	2.00	3,200	560	0.238	*		
	Left	0.00	0	0	0.000		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.431
Southbound	Through	1.00	1,600	1,124	0.703 *	N/S 2:	0.703 *
	Left	2.00	2,880	707	0.245	E/W 1:	0.000
	Right	3.00	4,800	833	0.051 *	E/W 2:	0.051 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.754
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	859	0.186	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.854
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	25	0.000		N/S 1:	0.189 *
Southbound	Through	2.00	3,200	467	0.154		N/S 2:	0.157
	Left	2.00	2,880	289	0.100	*	E/W 1:	0.152 *
	Right	1.97	3,148	423	0.084		E/W 2:	0.000
Westbound	Through	0.03	52	7	0.134	*		
	Left	1.00	1,600	44	0.028		V/C Ratio:	0.341
	Right	0.00	0	39	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	387	0.089	*	ITS:	0.000
	Left	1.00	1,600	5	0.003			
	Right	0.00	0	9	0.000		ICU:	0.441
Eastbound	Through	2.00	3,200	43	0.018	*		
	Left	0.00	1,600	7	0.004		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	203	0.087	N/S 1:	0.182
Southbound	Through	2.00	3,200	774	0.242 *	N/S 2:	0.277 *
	Left	1.00	1,600	49	0.031	E/W 1:	0.138
	Right	0.00	0	63	0.000	E/W 2:	0.182 *
Westbound	Through	3.00	4,800	425	0.102 *		
	Left	1.00	1,600	87	0.054	V/C Ratio:	0.459
	Right	0.00	0	84	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	642	0.151	ITS:	0.000
	Left	1.00	1,600	56	0.035 *		
	Right	0.00	0	52	0.000	ICU:	0.559
Eastbound	Through	3.00	4,800	351	0.084		
	Left	1.00	1,600	128	0.080 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	46	0.000		N/S 1:	0.097
Southbound	Through	3.00	4,800	366	0.086	*	N/S 2:	0.137 *
	Left	1.00	1,600	41	0.026		E/W 1:	0.124 *
	Right	0.00	0	37	0.000		E/W 2:	0.110
Westbound	Through	3.00	4,800	438	0.099			
	Left	1.00	1,600	39	0.024	*	V/C Ratio:	0.261
	Right	0.00	0	32	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	309	0.071		ITS:	0.000
	Left	1.00	1,600	81	0.051	*		
	Right	0.00	0	46	0.000		ICU:	0.361
Eastbound	Through	3.00	4,800	432	0.100	*		
	Left	1.00	1,600	18	0.011		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.366 *
Southbound	Through	3.00	4,800	716	0.149	N/S 2:	0.149
	Left	1.00	1,600	250	0.156 *	E/W 1:	0.054
	Right	0.00	0	0	0.000	E/W 2:	0.254 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.620
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	672	0.210 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	86	0.054	ICU:	0.720
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	731	0.254 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.14	1,828	292	0.054	N/S 1:	0.257 *
Southbound	Through	3.86	6,172	986	0.160	N/S 2:	0.201
	Left	1.00	1,600	65	0.041 *	E/W 1:	0.213 *
	Right	2.00	3,200	211	0.046	E/W 2:	0.000
Westbound	Through	1.00	1,600	136	0.085 *		
	Left	1.00	1,600	104	0.065	V/C Ratio:	0.470
	Right	0.00	0	208	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,520	0.216 *	ITS:	0.000
	Left	1.00	1,600	66	0.041		
	Right	0.00	1,600	205	0.128 *	ICU:	0.570
Eastbound	Through	2.52	2,437	231	0.095		
	Left	1.48	2,127	224	0.105	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	169	0.056		N/S 1:	0.371	*
Southbound	Through	2.00	3,200	610	0.191		N/S 2:	0.255	
	Left	1.00	1,600	271	0.169	*	E/W 1:	0.132	*
	Right	1.00	1,600	205	0.043		E/W 2:	0.092	
Westbound	Through	2.00	3,200	82	0.026				
	Left	1.00	1,600	85	0.053	*	V/C Ratio:	0.503	
	Right	1.00	1,600	36	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	645	0.202	*	ITS:	0.000	
	Left	1.00	1,600	103	0.064				
	Right	0.00	0	42	0.000		ICU:	0.603	
Eastbound	Through	2.00	3,200	210	0.079	*			
	Left	1.00	1,600	79	0.049		LOS:	B	

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.163

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	83	26	155	168	37	194
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]	83	26	155	168	37	194
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	7	39	42	9	49
Total Analysis Volume [veh/h]	83	26	155	168	37	194
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.03	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	13.62	11.06	0.00	0.00	8.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.72	0.72	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft]	17.98	17.98	0.00	0.00	2.31	0.00
d_A, Approach Delay [s/veh]	13.01		0.00		1.28	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.208

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	123	91	105	66	72	98
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]	123	91	105	66	72	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	23	26	17	18	25
Total Analysis Volume [veh/h]	123	91	105	66	72	98
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.10	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	13.40	11.25	0.00	0.00	7.70	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.31	1.31	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft]	32.72	32.72	0.00	0.00	4.04	0.00
d_A, Approach Delay [s/veh]	12.48		0.00		3.26	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.81					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.098

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	43	71	117	63	65	106
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]	43	71	117	63	65	106
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	18	29	16	16	27
Total Analysis Volume [veh/h]	43	71	117	63	65	106
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.10	0.12
d_M, Delay for Movement [s/veh]	7.66	0.00	0.00	0.00	11.66	10.25
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.27	0.27	0.00	0.00	0.82	0.82
95th-Percentile Queue Length [ft]	6.66	6.66	0.00	0.00	20.43	20.43
d_A, Approach Delay [s/veh]	2.89		0.00		10.79	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.68					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	77.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.279

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	16	68	241	1020	720	90
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]	16	68	241	1020	720	90
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	17	60	255	180	23
Total Analysis Volume [veh/h]	16	68	241	1020	720	90
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.11	0.30	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	77.89	20.70	11.30	0.00	0.00	0.00
Movement LOS	F	C	B	A	A	A
95th-Percentile Queue Length [veh]	1.71	1.71	1.25	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	42.79	42.79	31.13	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	31.59		2.16		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.49					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	226.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.270

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	187	3	0	0	97	176	329	0	213	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	3	0	0	97	176	329	0	213	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	1	0	0	24	44	82	0	53	0	0	0
Total Analysis Volume [veh/h]	187	3	0	0	97	176	329	0	213	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.27	0.01	0.00	0.00	0.42	0.16	0.20	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	226.51	213.80	0.00	0.00	31.48	8.96	7.78	0.00	0.00	7.65	0.00	0.00
Movement LOS	F	F			D	A	A		A	A	A	A
95th-Percentile Queue Length [veh]	11.43	11.43	0.00	0.00	1.95	0.58	0.76	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	285.80	285.80	0.00	0.00	48.74	14.45	18.98	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	226.31			16.96			4.72			2.55		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	49.94											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	287	14	2	47	10	3
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]	287	14	2	47	10	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	4	1	12	3	1
Total Analysis Volume [veh/h]	287	14	2	47	10	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.86	0.00	10.64	9.94
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.12	0.12	0.06	0.06
95th-Percentile Queue Length [ft]	0.00	0.00	3.03	3.03	1.48	1.48
d_A, Approach Delay [s/veh]	0.00		0.32		10.48	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	117	0.000	N/S 1:	0.319 *
Southbound	Through	2.00	3,200	725	0.263	N/S 2:	0.307
	Left	1.00	1,600	169	0.106 *	E/W 1:	0.250
	Right	1.00	1,600	112	0.017	E/W 2:	0.354 *
Westbound	Through	2.00	3,200	946	0.296 *		
	Left	1.00	1,600	147	0.092	V/C Ratio:	0.673
	Right	0.00	0	64	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	616	0.213 *	ITS:	0.000
	Left	1.00	1,600	70	0.044		
	Right	1.00	1,600	85	0.031	ICU:	0.773
Eastbound	Through	2.00	3,200	504	0.158		
	Left	1.00	1,600	92	0.058 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	103	0.000	N/S 1:	0.450 *
Southbound	Through	2.00	3,200	850	0.298	N/S 2:	0.366
	Left	1.00	1,600	198	0.124 *	E/W 1:	0.418 *
	Right	1.00	1,600	194	0.059	E/W 2:	0.290
Westbound	Through	2.00	3,200	702	0.219		
	Left	1.00	1,600	157	0.098 *	V/C Ratio:	0.868
	Right	0.00	0	108	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	934	0.326 *	ITS:	0.000
	Left	1.00	1,600	109	0.068		
	Right	1.00	1,600	112	0.036	ICU:	0.968
Eastbound	Through	2.00	3,200	1,025	0.320 *		
	Left	1.00	1,600	114	0.071	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	152	0.000	N/S 1:	0.239
Southbound	Through	2.00	3,200	704	0.268 *	N/S 2:	0.304 *
	Left	1.00	1,600	97	0.061	E/W 1:	0.279
	Right	0.00	0	82	0.000	E/W 2:	0.365 *
Westbound	Through	2.00	3,200	893	0.305 *		
	Left	1.00	1,600	136	0.085	V/C Ratio:	0.669
	Right	0.00	0	44	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	524	0.178	ITS:	0.000
	Left	1.00	1,600	57	0.036 *		
	Right	0.00	0	90	0.000	ICU:	0.769
Eastbound	Through	2.00	3,200	532	0.194		
	Left	1.00	1,600	96	0.060 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	127	0.000	N/S 1:	0.366 *
Southbound	Through	2.00	3,200	775	0.282	N/S 2:	0.339
	Left	1.00	1,600	108	0.068 *	E/W 1:	0.541 *
	Right	0.00	0	106	0.000	E/W 2:	0.346
Westbound	Through	2.00	3,200	710	0.255		
	Left	1.00	1,600	103	0.064 *	V/C Ratio:	0.907
	Right	0.00	0	50	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	905	0.298 *	ITS:	0.000
	Left	1.00	1,600	91	0.057		
	Right	0.00	0	134	0.000	ICU:	1.007
Eastbound	Through	2.00	3,200	1,391	0.477 *		
	Left	1.00	1,600	146	0.091	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	76	0.000	N/S 1:	0.296
Southbound	Through	2.00	3,200	1,320	0.436 *	N/S 2:	0.498 *
	Left	1.00	1,600	71	0.044	E/W 1:	0.290
	Right	0.00	0	119	0.000	E/W 2:	0.355 *
Westbound	Through	2.00	3,200	837	0.299 *		
	Left	1.00	1,600	171	0.107	V/C Ratio:	0.853
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	766	0.252	ITS:	0.000
	Left	1.00	1,600	99	0.062 *		
	Right	0.00	0	154	0.000	ICU:	0.953
Eastbound	Through	2.00	3,200	430	0.183		
	Left	1.00	1,600	90	0.056 *	LOS:	E

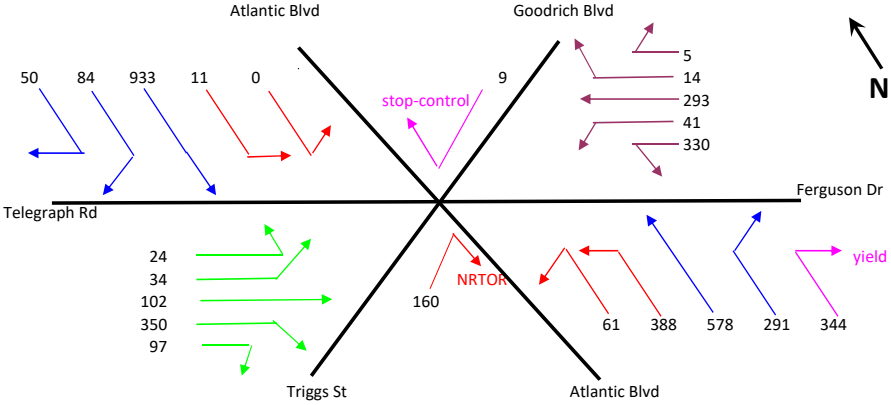
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	32	0.000	N/S 1:	0.471 *
Southbound	Through	2.00	3,200	1,264	0.405	N/S 2:	0.461
	Left	1.00	1,600	66	0.041 *	E/W 1:	0.492 *
	Right	0.00	0	75	0.000	E/W 2:	0.291
Westbound	Through	2.00	3,200	500	0.180		
	Left	1.00	1,600	73	0.046 *	V/C Ratio:	0.963
	Right	0.00	0	88	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,289	0.430 *	ITS:	0.000
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	229	0.000	ICU:	1.063
Eastbound	Through	2.00	3,200	1,197	0.446 *		
	Left	1.00	1,600	178	0.111	LOS:	F

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{61 + 388}{2} = 225$ or

Southbound Left: $\frac{11 + 0}{1} = 11$ or

Northbound Right: 160

Critical Volume #1 (CV1): **225**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{578 + 291}{3} = 290$ or

Southbound Through + Right $\frac{933 + 84 + 50}{3} = 356$

Critical Volume #2 (CV2): **356**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{330 + 41}{1} = 371$ or

Westbound Through + Right: $\frac{293 + 14 + 5}{2} = 156$ or

Westbound Right: 14 + 5 = 19

Critical Volume #3 (CV3): **371**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{24 + 34 + 102}{1} = 160$ or

Eastbound Through: $\frac{350}{3} = 116.7$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **160**

Critical Volume: 225 + 356 + 371 + 160 = **1,112**

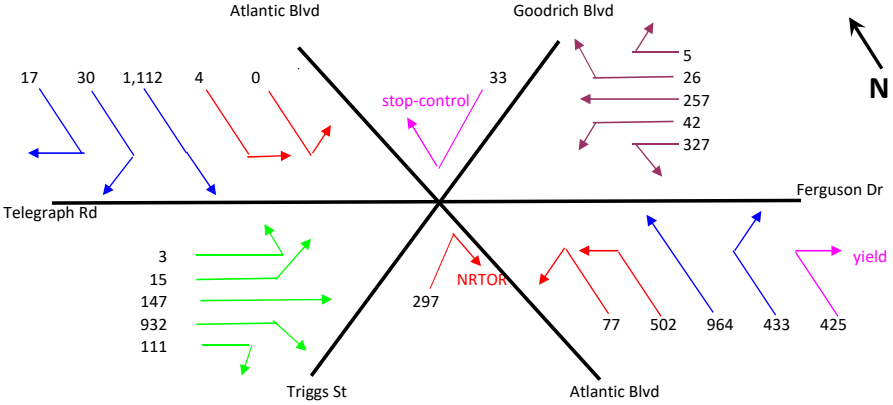
Intersection V/C: $\frac{1,112}{1,375} =$ **0.808**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.808** **Intersection LOS:** **D**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{77 + 502}{2} = 290$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 297

Critical Volume #1 (CV1): **297**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{964 + 433}{3} = 466$ or

Southbound Through + Right $\frac{1,112 + 30 + 17}{3} = 386$

Critical Volume #2 (CV2): **466**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{327 + 42}{1} = 369$ or

Westbound Through + Right: $\frac{257 + 26 + 5}{2} = 144$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **369**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 15 + 147}{1} = 165$ or

Eastbound Through: $\frac{932}{3} = 310.7$ or

Eastbound Right: 111

Critical Volume #4 (CV4): **311**

Critical Volume: 297 + 466 + 369 + 311 = **1,442**

Intersection V/C: $\frac{1,442}{1,375} =$ **1.049**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **1.049** **Intersection LOS:** **F**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	255	0.000		N/S 1:	0.392	
Southbound	Through	2.00	3,200	1,310	0.489	*	N/S 2:	0.510	*
	Left	1.00	1,600	214	0.134		E/W 1:	0.097	
	Right	0.00	1,600	247	0.154	*	E/W 2:	0.194	*
Westbound	Through	2.00	1,600	124	0.118				
	Left	0.00	1,600	65	0.041		V/C Ratio:	0.704	
	Right	0.00	0	79	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	746	0.258		ITS:	0.000	
	Left	1.00	1,600	33	0.021	*			
	Right	0.00	0	9	0.000		ICU:	0.804	
Eastbound	Through	2.00	1,600	17	0.056				
	Left	0.00	1,600	64	0.040	*	LOS:	D	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	212	0.000		N/S 1:	0.514	*
Southbound	Through	2.00	3,200	1,386	0.499		N/S 2:	0.505	
	Left	1.00	1,600	154	0.096	*	E/W 1:	0.343	*
	Right	0.00	1,600	165	0.103		E/W 2:	0.281	
Westbound	Through	2.00	1,600	29	0.054				
	Left	0.00	1,600	58	0.036	*	V/C Ratio:	0.857	
	Right	0.00	0	44	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	1,293	0.418	*	ITS:	0.000	
	Left	1.00	1,600	9	0.006				
	Right	0.00	0	29	0.000		ICU:	0.957	
Eastbound	Through	2.00	1,600	177	0.307	*			
	Left	0.00	1,600	285	0.178		LOS:	E	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	14	0.000	N/S 1:	0.225
Southbound	Through	3.00	4,800	1,461	0.307 *	N/S 2:	0.362 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.024 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.386
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,079	0.225	ITS:	0.000
	Left	1.00	1,600	88	0.055 *		
	Right	0.00	0	39	0.000	ICU:	0.486
Eastbound	Through	1.00	1,600	0	0.024 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.304 *
Southbound	Through	3.00	4,800	1,334	0.279	N/S 2:	0.293
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.049 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.353
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,458	0.304 *	ITS:	0.000
	Left	1.00	1,600	22	0.014		
	Right	0.00	0	78	0.000	ICU:	0.453
Eastbound	Through	1.00	1,600	0	0.049 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	312	0.063	N/S 1:	0.299 *
Southbound	Through	2.00	3,200	832	0.260	N/S 2:	0.287
	Left	1.00	1,600	202	0.126 *	E/W 1:	0.173
	Right	0.00	0	172	0.000	E/W 2:	0.412 *
Westbound	Through	3.00	4,800	1,165	0.279 *		
	Left	1.00	1,600	58	0.036	V/C Ratio:	0.711
	Right	0.00	0	19	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	535	0.173 *	ITS:	0.000
	Left	1.00	1,600	43	0.027		
	Right	0.00	0	35	0.000	ICU:	0.811
Eastbound	Through	3.00	4,800	622	0.137		
	Left	1.00	1,600	212	0.133 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	327	0.044	N/S 1:	0.491 *
Southbound	Through	2.00	3,200	812	0.254	N/S 2:	0.272
	Left	1.00	1,600	323	0.202 *	E/W 1:	0.275
	Right	0.00	0	203	0.000	E/W 2:	0.367 *
Westbound	Through	3.00	4,800	791	0.207 *		
	Left	1.00	1,600	54	0.034	V/C Ratio:	0.858
	Right	0.00	0	68	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	857	0.289 *	ITS:	0.000
	Left	1.00	1,600	28	0.018		
	Right	0.00	0	39	0.000	ICU:	0.958
Eastbound	Through	3.00	4,800	1,119	0.241		
	Left	1.00	1,600	256	0.160 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.409 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.290 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	487	0.152		
	Left	1.00	1,600	254	0.159 *	V/C Ratio:	0.699
	Right	1.00	1,600	698	0.357	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,178	0.409 *		
	Right	3.00	4,800	1,313	0.000	ICU:	0.799
Eastbound	Through	2.00	3,200	420	0.131 *		
	Left	0.00	0	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.498 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.633 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	959	0.300		
	Left	1.00	1,600	663	0.414 *	V/C Ratio:	1.131
	Right	1.00	1,600	759	0.267	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,433	0.498 *		
	Right	3.00	4,800	2,027	0.000	ICU:	1.231
Eastbound	Through	2.00	3,200	701	0.219 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	72	0.000	N/S 1:	0.148 *
Southbound	Through	1.00	1,600	68	0.047 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.322
	Right	0.00	0	9	0.000	E/W 2:	0.341 *
Westbound	Through	2.00	3,200	443	0.141 *		
	Left	2.00	2,880	282	0.098	V/C Ratio:	0.489
	Right	0.00	1,600	23	0.014	Loss Time:	0.100
Northbound	Through	2.00	1,600	16	0.010	ITS:	0.000
	Left	1.73	2,494	252	0.101 *		
	Right	0.00	0	67	0.000	ICU:	0.589
Eastbound	Through	2.00	3,200	651	0.224		
	Left	1.00	1,600	320	0.200 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	360	0.149	N/S 1:	0.300 *
Southbound	Through	1.00	1,600	280	0.189 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.557 *
	Right	0.00	0	7	0.000	E/W 2:	0.440
Westbound	Through	2.00	3,200	915	0.288		
	Left	2.00	2,880	467	0.162 *	V/C Ratio:	0.857
	Right	0.00	1,600	50	0.031	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	0.000
	Left	1.62	2,331	259	0.111 *		
	Right	0.00	0	124	0.000	ICU:	0.957
Eastbound	Through	2.00	3,200	1,139	0.395 *		
	Left	1.00	1,600	243	0.152	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.97	3,149	82	0.000	N/S 1:	0.029 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.03	1,486	43	0.029 *	E/W 1:	0.122
	Right	1.00	1,600	92	0.029	E/W 2:	0.237 *
Westbound	Through	3.00	4,800	789	0.164 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.266
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.366
Eastbound	Through	2.00	3,200	389	0.122		
	Left	2.00	2,880	211	0.073 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	500	0.074	N/S 1:	0.156 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.074
	Left	1.00	1,600	249	0.156 *	E/W 1:	0.226
	Right	1.00	1,600	268	0.012	E/W 2:	0.327 *
Westbound	Through	3.00	4,800	779	0.162 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.483
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.583
Eastbound	Through	2.00	3,200	723	0.226		
	Left	2.00	2,880	475	0.165 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	29	0.000	N/S 1:	0.023 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	37	0.023 *	E/W 1:	0.071
	Right	0.00	0	118	0.000	E/W 2:	0.253 *
Westbound	Through	3.00	4,800	856	0.203 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.276
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.376
Eastbound	Through	3.00	4,800	343	0.071		
	Left	1.00	1,600	80	0.050 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	177	0.080	N/S 1:	0.161 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.080
	Left	1.00	1,600	257	0.161 *	E/W 1:	0.186
	Right	0.00	0	126	0.000	E/W 2:	0.265 *
Westbound	Through	3.00	4,800	855	0.204 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.426
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.526
Eastbound	Through	3.00	4,800	892	0.186		
	Left	1.00	1,600	97	0.061 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.50	800	47	0.038	N/S 1:	0.065 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.038
	Left	1.50	2,160	141	0.065 *	E/W 1:	0.062
	Right	0.00	0	202	0.000	E/W 2:	0.271 *
Westbound	Through	3.00	4,800	901	0.230 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.336
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.436
Eastbound	Through	3.00	4,800	290	0.060		
	Left	1.00	1,600	66	0.041 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.46	729	98	0.101	N/S 1:	0.149 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.101
	Left	1.54	2,224	332	0.149 *	E/W 1:	0.217
	Right	0.00	0	162	0.000	E/W 2:	0.274 *
Westbound	Through	3.00	4,800	825	0.206 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.423
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.523
Eastbound	Through	3.00	4,800	1,042	0.217		
	Left	1.00	1,600	108	0.068 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.151 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.428 *
	Right	0.00	0	10	0.000	E/W 2:	0.186
Westbound	Through	3.00	4,800	884	0.186		
	Left	1.00	1,600	543	0.339 *	V/C Ratio:	0.579
	Right	1.00	1,600	325	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.134 *	ITS:	0.000
	Left	0.00	1,600	209	0.131		
	Right	0.00	0	37	0.000	ICU:	0.679
Eastbound	Through	3.00	4,800	388	0.089 *		
	Left	1.00	1,600	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.199 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.670 *
	Right	0.00	0	56	0.000	E/W 2:	0.191
Westbound	Through	3.00	4,800	749	0.168		
	Left	1.00	1,600	656	0.410 *	V/C Ratio:	0.869
	Right	1.00	1,600	230	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.138 *	ITS:	0.000
	Left	0.00	1,600	207	0.129		
	Right	0.00	0	68	0.000	ICU:	0.969
Eastbound	Through	3.00	4,800	1,181	0.260 *		
	Left	1.00	1,600	36	0.023	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	571	0.265	N/S 1:	0.431 *
Southbound	Through	2.00	3,200	788	0.246	N/S 2:	0.318
	Left	1.00	1,600	34	0.021 *	E/W 1:	0.213
	Right	0.00	0	57	0.000	E/W 2:	0.308 *
Westbound	Through	2.00	3,200	633	0.216 *		
	Left	1.00	1,600	273	0.171	V/C Ratio:	0.739
	Right	0.00	0	169	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,142	0.410 *	ITS:	0.000
	Left	2.00	2,880	153	0.053		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.839
Eastbound	Through	2.00	3,200	135	0.042		
	Left	2.00	2,880	266	0.092 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	627	0.237	N/S 1:	0.493 *
Southbound	Through	2.00	3,200	710	0.222	N/S 2:	0.306
	Left	1.00	1,600	73	0.046 *	E/W 1:	0.321
	Right	0.00	0	51	0.000	E/W 2:	0.344 *
Westbound	Through	2.00	3,200	555	0.189 *		
	Left	1.00	1,600	228	0.143	V/C Ratio:	0.837
	Right	0.00	0	285	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,144	0.447 *	ITS:	0.000
	Left	2.00	2,880	199	0.069		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.937
Eastbound	Through	2.00	3,200	569	0.178		
	Left	2.00	2,880	445	0.155 *	LOS:	E

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	76	0.040	N/S 1:	0.381
Southbound	Through	2.00	3,200	1,259	0.393 *	N/S 2:	0.397 *
	Left	1.00	1,600	80	0.050	E/W 1:	0.301 *
	Right	1.00	1,600	230	0.119	E/W 2:	0.245
Westbound	Through	2.00	3,200	733	0.229		
	Left	2.00	2,880	638	0.222 *	V/C Ratio:	0.698
	Right	1.00	1,600	465	0.069	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,052	0.331	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	127	0.079 *	ICU:	0.798
Eastbound	Through	2.00	3,200	185	0.058		
	Left	1.00	1,600	25	0.016	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	67	0.030	N/S 1:	0.349 *
Southbound	Through	2.00	3,200	1,091	0.341	N/S 2:	0.343
	Left	1.00	1,600	111	0.069 *	E/W 1:	0.348 *
	Right	1.00	1,600	359	0.190	E/W 2:	0.213
Westbound	Through	2.00	3,200	396	0.124		
	Left	2.00	2,880	344	0.119 *	V/C Ratio:	0.697
	Right	1.00	1,600	450	0.162	Loss Time:	0.100
Northbound	Through	2.00	3,200	892	0.280 *	ITS:	0.000
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	291	0.182	ICU:	0.797
Eastbound	Through	2.00	3,200	734	0.229 *		
	Left	1.00	1,600	37	0.023	LOS:	C

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.049
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.243 *
	Left	0.00	0	0	0.000	E/W 1:	0.557 *
	Right	0.00	0	0	0.000	E/W 2:	0.316
Westbound	Through	2.00	3,200	1,011	0.316		
	Left	1.00	1,600	541	0.338 *	V/C Ratio:	0.800
	Right	0.03	46	10	0.049	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.97	2,839	689	0.243 *		
	Right	0.00	0	175	0.000	ICU:	0.900
Eastbound	Through	2.00	3,200	526	0.219 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.017
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.187 *
	Left	0.00	0	0	0.000	E/W 1:	0.693 *
	Right	0.00	0	0	0.000	E/W 2:	0.191
Westbound	Through	2.00	3,200	611	0.191		
	Left	1.00	1,600	483	0.302 *	V/C Ratio:	0.880
	Right	0.11	178	30	0.017	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.89	2,719	508	0.187 *		
	Right	0.00	0	273	0.000	ICU:	0.980
Eastbound	Through	2.00	3,200	978	0.391 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.397
Southbound	Through	1.00	1,600	915	0.572 *	N/S 2:	0.572 *
	Left	2.00	2,880	681	0.236	E/W 1:	0.000
	Right	3.00	4,800	1,121	0.115 *	E/W 2:	0.115 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.687
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	769	0.161	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.787
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.621
Southbound	Through	1.00	1,600	1,589	0.993 *	N/S 2:	0.993 *
	Left	2.00	2,880	1,143	0.397	E/W 1:	0.000
	Right	3.00	4,800	1,102	0.031 *	E/W 2:	0.031 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	1.024
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,046	0.224	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.124
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.203 *
Southbound	Through	2.00	3,200	467	0.150	N/S 2:	0.153
	Left	2.00	2,880	208	0.072 *	E/W 1:	0.193 *
	Right	1.96	3,142	539	0.135	E/W 2:	0.000
Westbound	Through	0.04	58	10	0.172 *		
	Left	1.00	1,600	263	0.164	V/C Ratio:	0.396
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	591	0.131 *	ITS:	0.000
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.496
Eastbound	Through	2.00	3,200	61	0.021 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	19	0.000	N/S 1:	0.279 *
Southbound	Through	2.00	3,200	836	0.267	N/S 2:	0.269
	Left	2.00	2,880	325	0.113 *	E/W 1:	0.132 *
	Right	1.92	3,074	341	0.055	E/W 2:	0.000
Westbound	Through	0.08	126	14	0.111 *		
	Left	1.00	1,600	105	0.066	V/C Ratio:	0.411
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	762	0.166 *	ITS:	0.000
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	18	0.000	ICU:	0.511
Eastbound	Through	2.00	3,200	31	0.021 *		
	Left	0.00	1,600	18	0.011	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	156	0.069		N/S 1:	0.156
Southbound	Through	2.00	3,200	674	0.211	*	N/S 2:	0.242 *
	Left	1.00	1,600	28	0.018		E/W 1:	0.159
	Right	0.00	0	38	0.000		E/W 2:	0.182 *
Westbound	Through	3.00	4,800	566	0.126	*		
	Left	1.00	1,600	53	0.033		V/C Ratio:	0.424
	Right	0.00	0	39	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	624	0.138		ITS:	0.000
	Left	1.00	1,600	50	0.031	*		
	Right	0.00	0	77	0.000		ICU:	0.524
Eastbound	Through	3.00	4,800	527	0.126			
	Left	1.00	1,600	90	0.056	*	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	192	0.092		N/S 1:	0.206
Southbound	Through	2.00	3,200	1,185	0.370	*	N/S 2:	0.429 *
	Left	1.00	1,600	28	0.018		E/W 1:	0.200
	Right	0.00	0	60	0.000		E/W 2:	0.257 *
Westbound	Through	3.00	4,800	907	0.201	*		
	Left	1.00	1,600	88	0.055		V/C Ratio:	0.686
	Right	0.00	0	54	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	847	0.188		ITS:	0.000
	Left	1.00	1,600	95	0.059	*		
	Right	0.00	0	62	0.000		ICU:	0.786
Eastbound	Through	3.00	4,800	634	0.145			
	Left	1.00	1,600	89	0.056	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.131
Southbound	Through	3.00	4,800	540	0.118 *	N/S 2:	0.170 *
	Left	1.00	1,600	45	0.028	E/W 1:	0.123
	Right	0.00	0	25	0.000	E/W 2:	0.153 *
Westbound	Through	3.00	4,800	645	0.140 *		
	Left	1.00	1,600	41	0.026	V/C Ratio:	0.323
	Right	0.00	0	21	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	473	0.103	ITS:	0.000
	Left	1.00	1,600	83	0.052 *		
	Right	0.00	0	85	0.000	ICU:	0.423
Eastbound	Through	3.00	4,800	382	0.097		
	Left	1.00	1,600	21	0.013 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	35	0.000	N/S 1:	0.194
Southbound	Through	3.00	4,800	661	0.145 *	N/S 2:	0.216 *
	Left	1.00	1,600	62	0.039	E/W 1:	0.203 *
	Right	0.00	0	36	0.000	E/W 2:	0.192
Westbound	Through	3.00	4,800	762	0.166		
	Left	1.00	1,600	33	0.021 *	V/C Ratio:	0.419
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	710	0.155	ITS:	0.000
	Left	1.00	1,600	113	0.071 *		
	Right	0.00	0	101	0.000	ICU:	0.519
Eastbound	Through	3.00	4,800	774	0.182 *		
	Left	1.00	1,600	42	0.026	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.291 *
Southbound	Through	3.00	4,800	1,266	0.264	N/S 2:	0.264
	Left	1.00	1,600	116	0.073 *	E/W 1:	0.073
	Right	0.00	0	0	0.000	E/W 2:	0.258 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.549
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	697	0.218 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	116	0.073	ICU:	0.649
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	743	0.258 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.629 *
Southbound	Through	3.00	4,800	1,110	0.231	N/S 2:	0.231
	Left	1.00	1,600	325	0.203 *	E/W 1:	0.018
	Right	0.00	0	0	0.000	E/W 2:	0.094 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.723
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,363	0.426 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	29	0.018	ICU:	0.823
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	270	0.094 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	857	0.138	N/S 1:	0.266 *
Southbound	Through	3.00	4,800	729	0.152	N/S 2:	0.208
	Left	1.00	1,600	72	0.045 *	E/W 1:	0.344 *
	Right	2.00	3,200	281	0.065	E/W 2:	0.000
Westbound	Through	1.00	1,600	285	0.178 *		
	Left	1.00	1,600	156	0.098	V/C Ratio:	0.610
	Right	0.00	0	327	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,442	0.221 *	ITS:	0.000
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	132	0.000	ICU:	0.710
Eastbound	Through	3.00	4,800	667	0.166 *		
	Left	1.00	1,600	207	0.129	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	339	0.000	N/S 1:	0.244
Southbound	Through	4.00	6,400	1,389	0.217 *	N/S 2:	0.247 *
	Left	1.00	1,600	61	0.038	E/W 1:	0.481 *
	Right	2.00	3,200	537	0.149	E/W 2:	0.000
Westbound	Through	1.00	1,600	204	0.128		
	Left	1.00	1,600	312	0.195 *	V/C Ratio:	0.728
	Right	0.00	0	236	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,411	0.206	ITS:	0.000
	Left	1.00	1,600	48	0.030 *		
	Right	0.00	1,600	458	0.286 *	ICU:	0.828
Eastbound	Through	2.57	2,509	588	0.234		
	Left	1.43	2,062	537	0.260	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	790	0.389	N/S 1:	0.519 *
Southbound	Through	2.00	3,200	902	0.282	N/S 2:	0.441
	Left	1.00	1,600	319	0.199 *	E/W 1:	0.211
	Right	1.00	1,600	394	0.147 *	E/W 2:	0.251 *
Westbound	Through	2.00	3,200	215	0.067		
	Left	1.00	1,600	197	0.123	V/C Ratio:	0.770
	Right	1.00	1,600	110	0.007	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,023	0.320 *	ITS:	0.000
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	33	0.000	ICU:	0.870
Eastbound	Through	2.00	3,200	247	0.088		
	Left	1.00	1,600	167	0.104 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	318	0.049	N/S 1:	0.500 *
Southbound	Through	2.00	3,200	1,171	0.366	N/S 2:	0.401
	Left	1.00	1,600	327	0.204 *	E/W 1:	0.374 *
	Right	1.00	1,600	185	0.013	E/W 2:	0.175
Westbound	Through	2.00	3,200	84	0.026		
	Left	1.00	1,600	72	0.045 *	V/C Ratio:	0.874
	Right	1.00	1,600	202	0.104	Loss Time:	0.100
Northbound	Through	2.00	3,200	946	0.296 *	ITS:	0.000
	Left	1.00	1,600	56	0.035		
	Right	0.00	0	115	0.000	ICU:	0.974
Eastbound	Through	2.00	3,200	937	0.329 *		
	Left	1.00	1,600	239	0.149	LOS:	E

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	13	7	227	31	9	148
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	7	227	31	9	148
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	57	8	2	37
Total Analysis Volume [veh/h]	13	7	227	31	9	148
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	11.23	9.70	0.00	0.00	7.77	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.09	0.09	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft]	2.37	2.37	0.00	0.00	0.52	0.00
d_A, Approach Delay [s/veh]	10.69		0.00		0.45	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	9	22	196	29	61	154
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]	9	22	196	29	61	154
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	6	49	7	15	39
Total Analysis Volume [veh/h]	9	22	196	29	61	154
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.03	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	12.22	9.57	0.00	0.00	7.81	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.14	0.14	0.00	0.00	0.14	0.00
95th-Percentile Queue Length [ft]	3.44	3.44	0.00	0.00	3.56	0.00
d_A, Approach Delay [s/veh]	10.34		0.00		2.21	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.69					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	93	159	103	153	53	70
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]	93	159	103	153	53	70
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	40	26	38	13	18
Total Analysis Volume [veh/h]	93	159	103	153	53	70
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.11	0.08
d_M, Delay for Movement [s/veh]	7.96	0.00	0.00	0.00	13.95	10.52
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.71	0.71	0.00	0.00	0.71	0.71
95th-Percentile Queue Length [ft]	17.79	17.79	0.00	0.00	17.75	17.75
d_A, Approach Delay [s/veh]	2.94		0.00		12.00	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.51					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	37.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.053

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	6	19	133	604	805	54
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]	6	19	133	604	805	54
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	5	33	151	201	14
Total Analysis Volume [veh/h]	6	19	133	604	805	54
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.03	0.17	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	37.86	12.15	10.58	0.00	0.00	0.00
Movement LOS	E	B	B	A	A	A
95th-Percentile Queue Length [veh]	0.28	0.28	0.61	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	6.88	6.88	15.35	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.32		1.91		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	1	0	0	35	137	133	0	31	0	0	0
Total Analysis Volume [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	1.11	0.50	0.33	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	178.97	11.64	8.29	0.00	0.00	7.46	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	36.52	36.52	0.00	0.00	8.18	2.92	1.44	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	913.06	913.06	0.00	0.00	204.60	73.08	35.99	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			45.93			6.71			2.49		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	1696.22											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	93	25	0	28	14	0
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]	93	25	0	28	14	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	6	0	7	4	0
Total Analysis Volume [veh/h]	93	25	0	28	14	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.45	0.00	9.25	8.86
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	1.24	1.24
d_A, Approach Delay [s/veh]	0.00		0.00		9.25	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.81					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	107	44	195	118	45	359
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]	107	44	195	118	45	359
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	11	49	30	11	90
Total Analysis Volume [veh/h]	107	44	195	118	45	359
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.06	0.00	0.00	0.04	0.00
d_M, Delay for Movement [s/veh]	18.10	13.44	0.00	0.00	7.99	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.43	1.43	0.00	0.00	0.11	0.00
95th-Percentile Queue Length [ft]	35.76	35.76	0.00	0.00	2.81	0.00
d_A, Approach Delay [s/veh]	16.74		0.00		0.89	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.33					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.240

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	101	142	180	54	69	287
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]	101	142	180	54	69	287
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	36	45	14	17	72
Total Analysis Volume [veh/h]	101	142	180	54	69	287
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.17	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	17.70	13.48	0.00	0.00	7.85	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh]	1.99	1.99	0.00	0.00	0.16	0.00
95th-Percentile Queue Length [ft]	49.86	49.86	0.00	0.00	4.09	0.00
d_A, Approach Delay [s/veh]	15.23		0.00		1.52	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.09					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.403

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	78	156	165	113	191	185
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]	78	156	165	113	191	185
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	39	41	28	48	46
Total Analysis Volume [veh/h]	78	156	165	113	191	185
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.40	0.23
d_M, Delay for Movement [s/veh]	7.98	0.00	0.00	0.00	22.29	19.08
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh]	0.66	0.66	0.00	0.00	4.40	4.40
95th-Percentile Queue Length [ft]	16.62	16.62	0.00	0.00	109.98	109.98
d_A, Approach Delay [s/veh]	2.66		0.00		20.71	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	9.47					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	681.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.850

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	64	120	149	1150	1190	51
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]	64	120	149	1150	1190	51
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	30	37	288	298	13
Total Analysis Volume [veh/h]	64	120	149	1150	1190	51
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.85	0.27	0.27	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	681.39	585.36	13.81	0.00	0.00	0.00
Movement LOS	F	F	B	A	A	A
95th-Percentile Queue Length [veh]	16.36	16.36	1.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	409.01	409.01	26.83	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	618.76		1.58		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	42.55					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.453

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	2	0	0	11	19	258	0	109	0	0	0
Total Analysis Volume [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.45	0.00	0.00	4.19	0.07	0.64	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	2140.83	8.57	11.00	0.00	0.00	8.20	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	34.89	34.89	0.00	0.00	6.66	0.23	4.91	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	872.19	872.19	0.00	0.00	166.56	5.72	122.78	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			783.94			7.75			2.73		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1451.31											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.102

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	147	78	4	49	76	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	147	78	4	49	76	5
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	20	1	12	19	1
Total Analysis Volume [veh/h]	147	78	4	49	76	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.10	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.69	0.00	10.43	9.79
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.12	0.12	0.36	0.36
95th-Percentile Queue Length [ft]	0.00	0.00	3.08	3.08	9.05	9.05
d_A, Approach Delay [s/veh]	0.00		0.58		10.39	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.43					
Intersection LOS	B					

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	175	0.000		N/S 1:	0.424 *
Southbound	Through	2.00	3,200	791	0.302		N/S 2:	0.391
	Left	1.00	1,600	309	0.193	*	E/W 1:	0.358 *
	Right	1.00	1,600	242	0.055		E/W 2:	0.338
Westbound	Through	2.00	3,200	776	0.243			
	Left	1.00	1,600	177	0.111	*	V/C Ratio:	0.782
	Right	0.00	0	134	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	604	0.231	*	ITS:	0.000
	Left	1.00	1,600	142	0.089			
	Right	1.00	1,600	128	0.036		ICU:	0.882
Eastbound	Through	2.00	3,200	790	0.247	*		
	Left	1.00	1,600	152	0.095		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	197	0.000		N/S 1:	0.273
Southbound	Through	2.00	3,200	970	0.365	*	N/S 2:	0.426 *
	Left	1.00	1,600	114	0.071		E/W 1:	0.375 *
	Right	0.00	0	92	0.000		E/W 2:	0.350
Westbound	Through	2.00	3,200	693	0.245			
	Left	1.00	1,600	149	0.093	*	V/C Ratio:	0.801
	Right	0.00	0	68	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	577	0.202		ITS:	0.000
	Left	1.00	1,600	97	0.061	*		
	Right	0.00	0	152	0.000		ICU:	0.901
Eastbound	Through	2.00	3,200	749	0.282	*		
	Left	1.00	1,600	168	0.105		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

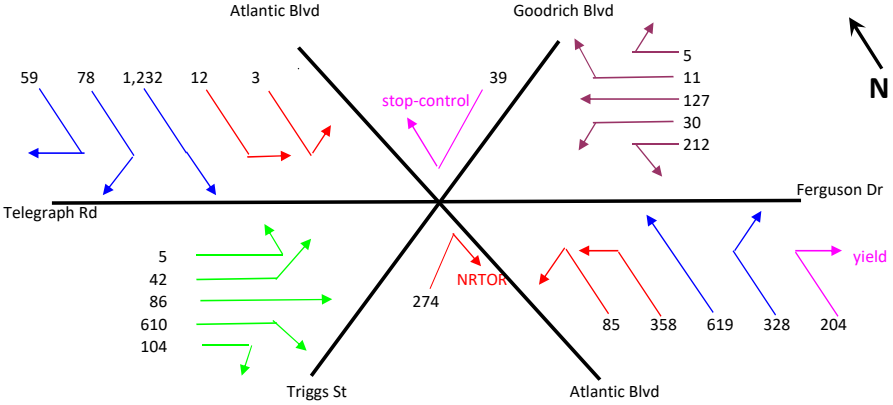
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	59	0.000		N/S 1:	0.330
Southbound	Through	2.00	3,200	879	0.293	*	N/S 2:	0.399 *
	Left	1.00	1,600	66	0.041		E/W 1:	0.273 *
	Right	0.00	0	105	0.000		E/W 2:	0.209
Westbound	Through	2.00	3,200	378	0.151			
	Left	1.00	1,600	96	0.060	*	V/C Ratio:	0.672
	Right	0.00	0	80	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	845	0.289		ITS:	0.000
	Left	1.00	1,600	169	0.106	*		
	Right	0.00	0	180	0.000		ICU:	0.772
Eastbound	Through	2.00	3,200	502	0.213	*		
	Left	1.00	1,600	93	0.058		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{85 + 358}{2} = 222$ or

Southbound Left: $\frac{12 + 3}{1} = 15$ or

Northbound Right: 274

Critical Volume #1 (CV1): **274**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{619 + 328}{3} = 316$ or

Southbound Through + Right $\frac{1,232 + 78 + 59}{3} = 456$

Critical Volume #2 (CV2): **456**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{212 + 30}{1} = 242$ or

Westbound Through + Right: $\frac{127 + 11 + 5}{2} = 72$ or

Westbound Right: 11 + 5 = 16

Critical Volume #3 (CV3): **242**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 42 + 86}{1} = 133$ or

Eastbound Through: $\frac{610}{3} = 203.3$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **203**

Critical Volume: 274 + 456 + 242 + 203 = **1,175**

Intersection V/C: $\frac{1,175}{1,375} =$ **0.855**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.855** **Intersection LOS:** **D**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	144	0.000		N/S 1:	0.354 *
Southbound	Through	2.00	3,200	963	0.346		N/S 2:	0.352
	Left	1.00	1,600	80	0.050	*	E/W 1:	0.098
	Right	0.00	1,600	101	0.063	*	E/W 2:	0.129 *
Westbound	Through	2.00	1,600	14	0.021			
	Left	0.00	1,600	19	0.012		V/C Ratio:	0.483
	Right	0.00	0	7	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	966	0.304	*	ITS:	0.000
	Left	1.00	1,600	10	0.006			
	Right	0.00	0	19	0.000		ICU:	0.583
Eastbound	Through	2.00	1,600	12	0.086			
	Left	0.00	1,600	106	0.066	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	2	0.000		N/S 1:	0.218
Southbound	Through	3.00	4,800	1,062	0.222	*	N/S 2:	0.235 *
	Left	1.00	1,600	0	0.000		E/W 1:	0.015 *
	Right	0.50	800	0	0.000		E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000			
	Left	0.50	800	0	0.000	*	V/C Ratio:	0.250
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	1,048	0.218		ITS:	0.000
	Left	1.00	1,600	20	0.013	*		
	Right	0.00	0	24	0.000		ICU:	0.350
Eastbound	Through	1.00	1,600	0	0.015	*		
	Left	1.00	1,600	3	0.002		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	269	0.021		N/S 1:	0.320	*
Southbound	Through	2.00	3,200	523	0.163		N/S 2:	0.174	
	Left	1.00	1,600	225	0.141	*	E/W 1:	0.192	
	Right	0.00	0	205	0.000		E/W 2:	0.346	*
Westbound	Through	3.00	4,800	747	0.198	*			
	Left	1.00	1,600	46	0.029		V/C Ratio:	0.666	
	Right	0.00	0	43	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	529	0.179	*	ITS:	0.000	
	Left	1.00	1,600	17	0.011				
	Right	0.00	0	25	0.000		ICU:	0.766	
Eastbound	Through	3.00	4,800	757	0.163				
	Left	1.00	1,600	236	0.148	*	LOS:	C	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.604 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.580 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	686	0.214		
	Left	1.00	1,600	515	0.322 *	V/C Ratio:	1.184
	Right	1.00	1,600	1,224	0.604 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	911	0.316		
	Right	3.00	4,800	1,552	0.007	ICU:	1.284
Eastbound	Through	2.00	3,200	825	0.258 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	241	0.037		N/S 1:	0.242	*
Southbound	Through	1.00	1,600	181	0.131	*	N/S 2:	0.000	
	Left	0.00	1,600	29	0.018		E/W 1:	0.699	*
	Right	0.00	0	13	0.000		E/W 2:	0.476	
Westbound	Through	2.00	3,200	780	0.248				
	Left	2.00	2,880	503	0.175	*	V/C Ratio:	0.941	
	Right	0.00	1,600	121	0.076		Loss Time:	0.100	
Northbound	Through	2.00	1,600	9	0.006		ITS:	0.000	
	Left	1.19	1,710	190	0.111	*			
	Right	0.00	0	72	0.000		ICU:	1.041	
Eastbound	Through	2.00	3,200	1,606	0.524	*			
	Left	1.00	1,600	365	0.228		LOS:	F	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.79	2,865	462	0.008		N/S 1:	0.179 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.008
	Left	1.21	1,741	312	0.179	*	E/W 1:	0.222
	Right	1.00	1,600	521	0.146		E/W 2:	0.498 *
Westbound	Through	3.00	4,800	918	0.191	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.677
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.777
Eastbound	Through	2.00	3,200	709	0.222			
	Left	2.00	2,880	885	0.307	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	339	0.159		N/S 1:	0.196 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.159
	Left	1.00	1,600	314	0.196	*	E/W 1:	0.174
	Right	0.00	0	230	0.000		E/W 2:	0.379 *
Westbound	Through	3.00	4,800	1,086	0.274	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.575
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.675
Eastbound	Through	3.00	4,800	837	0.174			
	Left	1.00	1,600	168	0.105	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.56	889	92	0.072	N/S 1:	0.115 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.072
	Left	1.44	2,080	239	0.115 *	E/W 1:	0.203
	Right	0.00	0	196	0.000	E/W 2:	0.358 *
Westbound	Through	3.00	4,800	1,220	0.295 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.473
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.573
Eastbound	Through	3.00	4,800	969	0.202		
	Left	1.00	1,600	100	0.063 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	17	0.000		N/S 1:	0.315	*
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000	
	Left	1.00	1,600	32	0.020		E/W 1:	0.587	*
	Right	0.00	0	57	0.000		E/W 2:	0.251	
Westbound	Through	3.00	4,800	1,036	0.228				
	Left	1.00	1,600	536	0.335	*	V/C Ratio:	0.902	
	Right	1.00	1,600	229	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	33	0.281	*	ITS:	0.000	
	Left	0.00	1,600	416	0.260				
	Right	0.00	0	83	0.000		ICU:	1.002	
Eastbound	Through	3.00	4,800	1,127	0.252	*			
	Left	1.00	1,600	36	0.023		LOS:	F	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	609	0.223 *	N/S 1:	0.382
Southbound	Through	2.00	3,200	488	0.153	N/S 2:	0.393 *
	Left	1.00	1,600	70	0.044	E/W 1:	0.248
	Right	0.00	0	50	0.000	E/W 2:	0.364 *
Westbound	Through	2.00	3,200	613	0.207 *		
	Left	1.00	1,600	191	0.119	V/C Ratio:	0.757
	Right	0.00	0	201	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	882	0.338	ITS:	0.000
	Left	2.00	2,880	490	0.170 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.857
Eastbound	Through	2.00	3,200	412	0.129		
	Left	2.00	2,880	453	0.157 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	143	0.089	N/S 1:	0.176
Southbound	Through	2.00	3,200	623	0.195 *	N/S 2:	0.261 *
	Left	1.00	1,600	33	0.021	E/W 1:	0.236 *
	Right	1.00	1,600	354	0.221	E/W 2:	0.230
Westbound	Through	2.00	3,200	571	0.178		
	Left	2.00	2,880	295	0.102 *	V/C Ratio:	0.497
	Right	1.00	1,600	332	0.105	Loss Time:	0.100
Northbound	Through	2.00	3,200	496	0.155	ITS:	0.000
	Left	1.00	1,600	105	0.066 *		
	Right [1]	1.00	1,600	215	0.134 *	ICU:	0.597
Eastbound	Through	2.00	3,200	393	0.123		
	Left	1.00	1,600	14	0.009	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.058
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.167 *
	Left	0.00	0	0	0.000	E/W 1:	0.439 *
	Right	0.00	0	0	0.000	E/W 2:	0.198
Westbound	Through	2.00	3,200	634	0.198		
	Left	1.00	1,600	294	0.184 *	V/C Ratio:	0.606
	Right	0.08	133	20	0.058	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.92	2,760	461	0.167 *		
	Right	0.00	0	202	0.000	ICU:	0.706
Eastbound	Through	2.00	3,200	614	0.255 *		
	Left	0.00	0	0	0.000	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.479
Southbound	Through	1.00	1,600	1,204	0.753 *	N/S 2:	0.753 *
	Left	2.00	2,880	793	0.275	E/W 1:	0.000
	Right	3.00	4,800	1,157	0.103 *	E/W 2:	0.103 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.856
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	947	0.204	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.956
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.215 *
Southbound	Through	2.00	3,200	521	0.171	N/S 2:	0.174
	Left	2.00	2,880	321	0.111 *	E/W 1:	0.231 *
	Right	1.98	3,167	676	0.158	E/W 2:	0.000
Westbound	Through	0.02	33	7	0.213 *		
	Left	1.00	1,600	44	0.028	V/C Ratio:	0.446
	Right	0.00	0	39	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	458	0.104 *	ITS:	0.000
	Left	1.00	1,600	5	0.003		
	Right	0.00	0	9	0.000	ICU:	0.546
Eastbound	Through	2.00	3,200	43	0.018 *		
	Left	0.00	1,600	7	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	203	0.087	N/S 1:	0.201
Southbound	Through	2.00	3,200	854	0.267 *	N/S 2:	0.302 *
	Left	1.00	1,600	49	0.031	E/W 1:	0.156
	Right	0.00	0	63	0.000	E/W 2:	0.198 *
Westbound	Through	3.00	4,800	505	0.118 *		
	Left	1.00	1,600	87	0.054	V/C Ratio:	0.500
	Right	0.00	0	84	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	730	0.170	ITS:	0.000
	Left	1.00	1,600	56	0.035 *		
	Right	0.00	0	52	0.000	ICU:	0.600
Eastbound	Through	3.00	4,800	439	0.102		
	Left	1.00	1,600	128	0.080 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	46	0.000		N/S 1:	0.112
Southbound	Through	3.00	4,800	420	0.097	*	N/S 2:	0.148 *
	Left	1.00	1,600	41	0.026		E/W 1:	0.144 *
	Right	0.00	0	37	0.000		E/W 2:	0.127
Westbound	Through	3.00	4,800	518	0.116			
	Left	1.00	1,600	41	0.026	*	V/C Ratio:	0.292
	Right	0.00	0	34	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	380	0.086		ITS:	0.000
	Left	1.00	1,600	81	0.051	*		
	Right	0.00	0	46	0.000		ICU:	0.392
Eastbound	Through	3.00	4,800	520	0.118	*		
	Left	1.00	1,600	18	0.011		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.468 *
Southbound	Through	3.00	4,800	798	0.166	N/S 2:	0.166
	Left	1.00	1,600	368	0.230 *	E/W 1:	0.054
	Right	0.00	0	0	0.000	E/W 2:	0.269 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.737
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	762	0.238 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	86	0.054	ICU:	0.837
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	774	0.269 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.11	1,773	301	0.062	N/S 1:	0.267 *
Southbound	Through	3.89	6,227	1,057	0.170	N/S 2:	0.211
	Left	1.00	1,600	65	0.041 *	E/W 1:	0.214 *
	Right	2.00	3,200	211	0.046	E/W 2:	0.000
Westbound	Through	1.00	1,600	138	0.086 *		
	Left	1.00	1,600	104	0.065	V/C Ratio:	0.481
	Right	0.00	0	208	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,598	0.226 *	ITS:	0.000
	Left	1.00	1,600	66	0.041		
	Right	0.00	1,600	205	0.128 *	ICU:	0.581
Eastbound	Through	2.50	2,395	233	0.097		
	Left	1.50	2,165	234	0.108	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	169	0.056		N/S 1:	0.405 *
Southbound	Through	2.00	3,200	621	0.194		N/S 2:	0.258
	Left	1.00	1,600	325	0.203	*	E/W 1:	0.132 *
	Right	1.00	1,600	205	0.027		E/W 2:	0.076
Westbound	Through	2.00	3,200	82	0.026			
	Left	1.00	1,600	85	0.053	*	V/C Ratio:	0.537
	Right	1.00	1,600	36	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	645	0.202	*	ITS:	0.000
	Left	1.00	1,600	103	0.064			
	Right	0.00	0	42	0.000		ICU:	0.637
Eastbound	Through	2.00	3,200	210	0.079	*		
	Left	1.00	1,600	79	0.049		LOS:	B

* Critical Movement

Intersection Level Of Service Report
Intersection 6: W Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.412

Intersection Setup

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

Volumes

Name	W Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	153	56	210	245	70	244
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]	153	56	210	245	70	244
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	14	53	61	18	61
Total Analysis Volume [veh/h]	153	56	210	245	70	244
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.08	0.00	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	22.57	17.96	0.00	0.00	8.48	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh]	2.64	2.64	0.00	0.00	0.20	0.00
95th-Percentile Queue Length [ft]	65.90	65.90	0.00	0.00	5.06	0.00
d_A, Approach Delay [s/veh]	21.34		0.00		1.89	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.17					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: E Citadel Dwy & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.387

Intersection Setup

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

Volumes

Name	E Citadel Dwy		Smithway St		Smithway St	
Base Volume Input [veh/h]	173	131	135	121	116	131
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]	173	131	135	121	116	131
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	33	34	30	29	33
Total Analysis Volume [veh/h]	173	131	135	121	116	131
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.39	0.15	0.00	0.00	0.09	0.00
d_M, Delay for Movement [s/veh]	20.39	16.59	0.00	0.00	8.02	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh]	3.23	3.23	0.00	0.00	0.29	0.00
95th-Percentile Queue Length [ft]	80.63	80.63	0.00	0.00	7.28	0.00
d_A, Approach Delay [s/veh]	18.75		0.00		3.77	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	8.22					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Tubeway Ave & Smithway St

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.167

Intersection Setup

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Tubeway Ave		Tubeway Ave		Smithway St	
Base Volume Input [veh/h]	94	106	156	83	83	152
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]	94	106	156	83	83	152
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	27	39	21	21	38
Total Analysis Volume [veh/h]	94	106	156	83	83	152
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.17	0.18
d_M, Delay for Movement [s/veh]	7.92	0.00	0.00	0.00	15.07	12.08
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh]	0.53	0.53	0.00	0.00	1.55	1.55
95th-Percentile Queue Length [ft]	13.25	13.25	0.00	0.00	38.85	38.85
d_A, Approach Delay [s/veh]	3.72		0.00		13.13	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	5.68					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 13: Hoefner Ave & Telegraph Ave

Control Type:	Two-way stop	Delay (sec / veh):	3,376.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	6.676

Intersection Setup

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	140.00	100.00	100.00	120.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name	Hoefner Ave		Telegraph Ave		Telegraph Ave	
Base Volume Input [veh/h]	46	138	318	1551	1234	123
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	138	318	1551	1234	123
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	35	80	388	309	31
Total Analysis Volume [veh/h]	46	138	318	1551	1234	123
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	6.68	0.32	0.63	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	3376.30	2862.15	23.69	0.00	0.00	0.00
Movement LOS	F	F	C	A	A	A
95th-Percentile Queue Length [veh]	22.75	22.75	4.35	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	568.63	568.63	108.66	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	2990.69		4.03		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	163.58					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	434.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.724

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	187	3	0	0	97	176	383	0	213	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	3	0	0	97	176	383	0	213	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	1	0	0	24	44	96	0	53	0	0	0
Total Analysis Volume [veh/h]	187	3	0	0	97	176	383	0	213	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.72	0.01	0.00	0.00	0.51	0.16	0.24	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	433.97	414.95	0.00	0.00	41.80	8.96	7.90	0.00	0.00	7.65	0.00	0.00
Movement LOS	F	F			E	A	A		A	A	A	A
95th-Percentile Queue Length [veh]	14.86	14.86	0.00	0.00	2.54	0.58	0.92	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	371.48	371.48	0.00	0.00	63.57	14.45	23.03	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	433.67			20.63			5.08			2.55		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	85.98											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 29: Hoefner Ave & Citadel Valet Dwy

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.182

Intersection Setup

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	Hoefner Ave		Hoefner Ave		Citadel Valet Dwy	
Base Volume Input [veh/h]	287	124	2	47	110	3
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]	287	124	2	47	110	3
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	31	1	12	28	1
Total Analysis Volume [veh/h]	287	124	2	47	110	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.18	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.14	0.00	12.31	11.54
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh]	0.00	0.00	0.13	0.13	0.68	0.68
95th-Percentile Queue Length [ft]	0.00	0.00	3.34	3.34	16.98	16.98
d_A, Approach Delay [s/veh]	0.00		0.33		12.29	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.45					
Intersection LOS	B					

FUTURE WITH TRUCK TRAFFIC WITHOUT PROJECT WEEKDAY CONDITIONS - YEAR 2025

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	121	0.000	N/S 1:	0.350 *
Southbound	Through	2.00	3,200	827	0.296	N/S 2:	0.340
	Left	1.00	1,600	174	0.109 *	E/W 1:	0.262
	Right	1.00	1,600	116	0.018	E/W 2:	0.376 *
Westbound	Through	2.00	3,200	1,015	0.317 *		
	Left	1.00	1,600	151	0.094	V/C Ratio:	0.726
	Right	0.00	0	66	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	705	0.241 *	ITS:	0.000
	Left	1.00	1,600	71	0.044		
	Right	1.00	1,600	85	0.031	ICU:	0.826
Eastbound	Through	2.00	3,200	538	0.168		
	Left	1.00	1,600	95	0.059 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	106	0.000	N/S 1:	0.493 *
Southbound	Through	2.00	3,200	961	0.333	N/S 2:	0.399
	Left	1.00	1,600	204	0.128 *	E/W 1:	0.445 *
	Right	1.00	1,600	200	0.061	E/W 2:	0.309
Westbound	Through	2.00	3,200	751	0.235		
	Left	1.00	1,600	162	0.101 *	V/C Ratio:	0.938
	Right	0.00	0	111	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,057	0.365 *	ITS:	0.000
	Left	1.00	1,600	105	0.066		
	Right	1.00	1,600	109	0.035	ICU:	1.038
Eastbound	Through	2.00	3,200	1,100	0.344 *		
	Left	1.00	1,600	118	0.074	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	157	0.000		N/S 1:	0.264
Southbound	Through	2.00	3,200	799	0.299	*	N/S 2:	0.335 *
	Left	1.00	1,600	100	0.063		E/W 1:	0.291
	Right	0.00	0	84	0.000		E/W 2:	0.388 *
Westbound	Through	2.00	3,200	959	0.326	*		
	Left	1.00	1,600	136	0.085		V/C Ratio:	0.723
	Right	0.00	0	45	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	597	0.201		ITS:	0.000
	Left	1.00	1,600	58	0.036	*		
	Right	0.00	0	90	0.000		ICU:	0.823
Eastbound	Through	2.00	3,200	569	0.206			
	Left	1.00	1,600	99	0.062	*	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	130	0.000		N/S 1:	0.403 *
Southbound	Through	2.00	3,200	868	0.312		N/S 2:	0.366
	Left	1.00	1,600	111	0.069	*	E/W 1:	0.570 *
	Right	0.00	0	109	0.000		E/W 2:	0.366
Westbound	Through	2.00	3,200	762	0.272			
	Left	1.00	1,600	99	0.062	*	V/C Ratio:	0.973
	Right	0.00	0	52	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,017	0.334	*	ITS:	0.000
	Left	1.00	1,600	86	0.054			
	Right	0.00	0	131	0.000		ICU:	1.073
Eastbound	Through	2.00	3,200	1,494	0.508	*		
	Left	1.00	1,600	150	0.094		LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	78	0.000	N/S 1:	0.333
Southbound	Through	2.00	3,200	1,509	0.496 *	N/S 2:	0.559 *
	Left	1.00	1,600	74	0.046	E/W 1:	0.304
	Right	0.00	0	123	0.000	E/W 2:	0.378 *
Westbound	Through	2.00	3,200	900	0.320 *		
	Left	1.00	1,600	177	0.111	V/C Ratio:	0.937
	Right	0.00	0	41	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	877	0.287	ITS:	0.000
	Left	1.00	1,600	101	0.063 *		
	Right	0.00	0	157	0.000	ICU:	1.037
Eastbound	Through	2.00	3,200	462	0.193		
	Left	1.00	1,600	93	0.058 *	LOS:	F

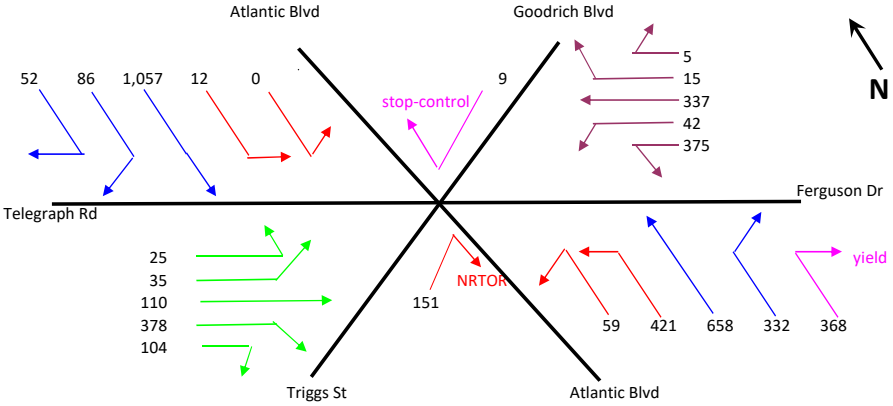
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	33	0.000	N/S 1:	0.530 *
Southbound	Through	2.00	3,200	1,443	0.461	N/S 2:	0.517
	Left	1.00	1,600	68	0.043 *	E/W 1:	0.523 *
	Right	0.00	0	77	0.000	E/W 2:	0.306
Westbound	Through	2.00	3,200	538	0.192		
	Left	1.00	1,600	76	0.048 *	V/C Ratio:	1.053
	Right	0.00	0	90	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,468	0.487 *	ITS:	0.000
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	234	0.000	ICU:	1.153
Eastbound	Through	2.00	3,200	1,287	0.475 *		
	Left	1.00	1,600	183	0.114	LOS:	F

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic without Project Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{59 + 421}{2} = 240$ or

Southbound Left: $\frac{12 + 0}{1} = 12$ or

Northbound Right: 151

Critical Volume #1 (CV1): **240**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{658 + 332}{3} = 330$ or

Southbound Through + Right $\frac{1,057 + 86 + 52}{3} = 398$

Critical Volume #2 (CV2): **398**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{375 + 42}{1} = 417$ or

Westbound Through + Right: $\frac{337 + 15 + 5}{2} = 179$ or

Westbound Right: 15 + 5 = 20

Critical Volume #3 (CV3): **417**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{25 + 35 + 110}{1} = 170$ or

Eastbound Through: $\frac{378}{3} = 126$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **170**

Critical Volume: 240 + 398 + 417 + 170 = **1,225**

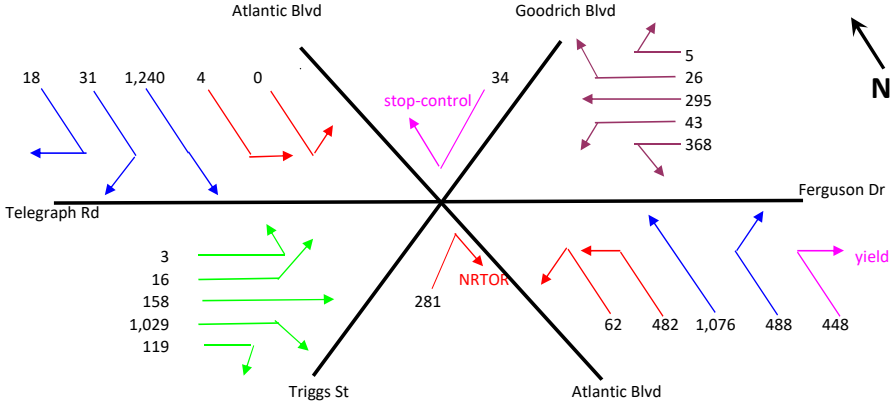
Intersection V/C: $\frac{1,225}{1,375} = \mathbf{0.891}$

ATSAC/ATCS Credit: 0.00

Final intersection V/C: 0.891 **Intersection LOS: D**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic without Project Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{62 + 482}{2} = 272$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 281

Critical Volume #1 (CV1): **281**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{1,076 + 488}{3} = 521$ or

Southbound Through + Right $\frac{1,240 + 31 + 18}{3} = 430$

Critical Volume #2 (CV2): **521**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{368 + 43}{1} = 411$ or

Westbound Through + Right: $\frac{295 + 26 + 5}{2} = 163$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **411**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 16 + 158}{1} = 177$ or

Eastbound Through: $\frac{1,029}{3} = 343$ or

Eastbound Right: 119

Critical Volume #4 (CV4): **343**

Critical Volume: 281 + 521 + 411 + 343 = **1,556**

Intersection V/C: $\frac{1,556}{1,375} =$ **1.132**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **1.132** **Intersection LOS:** **F**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	263	0.000	N/S 1:	0.430
Southbound	Through	2.00	3,200	1,495	0.549 *	N/S 2:	0.570 *
	Left	1.00	1,600	221	0.138	E/W 1:	0.100
	Right	0.00	1,600	266	0.166 *	E/W 2:	0.207 *
Westbound	Through	2.00	1,600	128	0.122		
	Left	0.00	1,600	67	0.042	V/C Ratio:	0.777
	Right	0.00	0	81	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	852	0.292	ITS:	0.000
	Left	1.00	1,600	34	0.021 *		
	Right	0.00	0	9	0.000	ICU:	0.877
Eastbound	Through	2.00	1,600	18	0.058		
	Left	0.00	1,600	66	0.041 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	219	0.000	N/S 1:	0.573 *
Southbound	Through	2.00	3,200	1,581	0.563	N/S 2:	0.569
	Left	1.00	1,600	159	0.099 *	E/W 1:	0.353 *
	Right	0.00	1,600	178	0.111	E/W 2:	0.294
Westbound	Through	2.00	1,600	29	0.056		
	Left	0.00	1,600	60	0.038 *	V/C Ratio:	0.926
	Right	0.00	0	45	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,472	0.474 *	ITS:	0.000
	Left	1.00	1,600	9	0.006		
	Right	0.00	0	29	0.000	ICU:	1.026
Eastbound	Through	2.00	1,600	182	0.315 *		
	Left	0.00	1,600	293	0.183	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	15	0.000	N/S 1:	0.254
Southbound	Through	3.00	4,800	1,641	0.345 *	N/S 2:	0.401 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.025 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.426
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,220	0.254	ITS:	0.000
	Left	1.00	1,600	90	0.056 *		
	Right	0.00	0	40	0.000	ICU:	0.526
Eastbound	Through	1.00	1,600	0	0.025 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.334 *
Southbound	Through	3.00	4,800	1,471	0.308	N/S 2:	0.322
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.050 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.384
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,604	0.334 *	ITS:	0.000
	Left	1.00	1,600	23	0.014		
	Right	0.00	0	80	0.000	ICU:	0.484
Eastbound	Through	1.00	1,600	0	0.050 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	325	0.064	N/S 1:	0.334 *
Southbound	Through	2.00	3,200	957	0.299	N/S 2:	0.327
	Left	1.00	1,600	217	0.136 *	E/W 1:	0.191
	Right	0.00	0	185	0.000	E/W 2:	0.451 *
Westbound	Through	3.00	4,800	1,311	0.312 *		
	Left	1.00	1,600	60	0.038	V/C Ratio:	0.785
	Right	0.00	0	20	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	615	0.198 *	ITS:	0.000
	Left	1.00	1,600	44	0.028		
	Right	0.00	0	36	0.000	ICU:	0.885
Eastbound	Through	3.00	4,800	700	0.153		
	Left	1.00	1,600	223	0.139 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	340	0.049	N/S 1:	0.547 *
Southbound	Through	2.00	3,200	934	0.292	N/S 2:	0.310
	Left	1.00	1,600	347	0.217 *	E/W 1:	0.299
	Right	0.00	0	218	0.000	E/W 2:	0.387 *
Westbound	Through	3.00	4,800	859	0.224 *		
	Left	1.00	1,600	56	0.035	V/C Ratio:	0.934
	Right	0.00	0	70	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	985	0.330 *	ITS:	0.000
	Left	1.00	1,600	28	0.018		
	Right	0.00	0	40	0.000	ICU:	1.034
Eastbound	Through	3.00	4,800	1,229	0.264		
	Left	1.00	1,600	261	0.163 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.470 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.269 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	484	0.151 *		
	Left	1.00	1,600	240	0.150	V/C Ratio:	0.739
	Right	1.00	1,600	682	0.351	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,355	0.470 *		
	Right	3.00	4,800	1,510	0.000	ICU:	0.839
Eastbound	Through	2.00	3,200	378	0.118 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.515 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.553 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	876	0.274		
	Left	1.00	1,600	577	0.361 *	V/C Ratio:	1.068
	Right	0.78	1,243	576	0.283	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.22	3,201	1,648	0.515 *		
	Right	3.00	4,800	2,331	0.000	ICU:	1.168
Eastbound	Through	2.00	3,200	613	0.192 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	65	0.000	N/S 1:	0.147 *
Southbound	Through	1.00	1,600	63	0.044 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.276
	Right	0.00	0	9	0.000	E/W 2:	0.315 *
Westbound	Through	2.00	3,200	412	0.132 *		
	Left	2.00	2,880	247	0.086	V/C Ratio:	0.462
	Right	0.00	0	11	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	16	0.008	ITS:	0.000
	Left	1.82	2,619	271	0.103 *		
	Right	0.00	0	67	0.000	ICU:	0.562
Eastbound	Through	2.00	3,200	542	0.190		
	Left	1.00	1,600	293	0.183 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	320	0.148	N/S 1:	0.278 *
Southbound	Through	1.00	1,600	247	0.168 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.431 *
	Right	0.00	0	7	0.000	E/W 2:	0.337
Westbound	Through	2.00	3,200	737	0.233		
	Left	2.00	2,880	327	0.114 *	V/C Ratio:	0.709
	Right	0.00	1,600	28	0.018	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	0.000
	Left	1.75	2,526	278	0.110 *		
	Right	0.00	0	124	0.000	ICU:	0.809
Eastbound	Through	2.00	3,200	889	0.317 *		
	Left	1.00	1,600	167	0.104	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	54	0.000	N/S 1:	0.012 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	19	0.012 *	E/W 1:	0.091
	Right	1.00	1,600	52	0.021	E/W 2:	0.205 *
Westbound	Through	3.00	4,800	727	0.151 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.217
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.317
Eastbound	Through	2.00	3,200	290	0.091		
	Left	2.00	2,880	155	0.054 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	342	0.053	N/S 1:	0.071 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.053
	Left	1.00	1,600	113	0.071 *	E/W 1:	0.180
	Right	1.00	1,600	151	0.024	E/W 2:	0.226 *
Westbound	Through	3.00	4,800	568	0.118 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.297
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.397
Eastbound	Through	2.00	3,200	576	0.180		
	Left	2.00	2,880	310	0.108 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	16	0.000	N/S 1:	0.015 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	24	0.015 *	E/W 1:	0.050
	Right	0.00	0	97	0.000	E/W 2:	0.214 *
Westbound	Through	3.00	4,800	768	0.180 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.229
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.329
Eastbound	Through	3.00	4,800	242	0.050		
	Left	1.00	1,600	54	0.034 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	105	0.059	N/S 1:	0.116 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.059
	Left	1.00	1,600	185	0.116 *	E/W 1:	0.144
	Right	0.00	0	64	0.000	E/W 2:	0.152 *
Westbound	Through	3.00	4,800	601	0.139 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.268
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.368
Eastbound	Through	3.00	4,800	693	0.144		
	Left	1.00	1,600	21	0.013 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.47	745	41	0.035	N/S 1:	0.061 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.035
	Left	1.53	2,209	135	0.061 *	E/W 1:	0.046
	Right	0.00	0	200	0.000	E/W 2:	0.259 *
Westbound	Through	3.00	4,800	846	0.219 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.320
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.420
Eastbound	Through	3.00	4,800	212	0.044		
	Left	1.00	1,600	64	0.040 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.41	653	81	0.096	N/S 1:	0.138 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.096
	Left	1.59	2,292	316	0.138 *	E/W 1:	0.178
	Right	0.00	0	131	0.000	E/W 2:	0.207 *
Westbound	Through	3.00	4,800	593	0.151 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.345
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.445
Eastbound	Through	3.00	4,800	853	0.178		
	Left	1.00	1,600	90	0.056 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.137 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.434 *
	Right	0.00	0	10	0.000	E/W 2:	0.179
Westbound	Through	3.00	4,800	849	0.179		
	Left	1.00	1,600	582	0.364 *	V/C Ratio:	0.571
	Right	1.00	1,600	350	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.120 *	ITS:	0.000
	Left	0.00	1,600	187	0.117		
	Right	0.00	0	35	0.000	ICU:	0.671
Eastbound	Through	3.00	4,800	303	0.070 *		
	Left	1.00	1,600	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.140 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.654 *
	Right	0.00	0	56	0.000	E/W 2:	0.155
Westbound	Through	3.00	4,800	578	0.132		
	Left	1.00	1,600	702	0.439 *	V/C Ratio:	0.794
	Right	1.00	1,600	247	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.079 *	ITS:	0.000
	Left	0.00	1,600	114	0.071		
	Right	0.00	0	55	0.000	ICU:	0.894
Eastbound	Through	3.00	4,800	977	0.215 *		
	Left	1.00	1,600	36	0.023	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	596	0.310		N/S 1:	0.443 *
Southbound	Through	2.00	3,200	863	0.270		N/S 2:	0.355
	Left	1.00	1,600	16	0.010	*	E/W 1:	0.224
	Right	0.00	0	44	0.000		E/W 2:	0.285 *
Westbound	Through	2.00	3,200	665	0.222	*		
	Left	1.00	1,600	293	0.183		V/C Ratio:	0.728
	Right	0.00	0	174	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,210	0.433	*	ITS:	0.000
	Left	2.00	2,880	131	0.045			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.828
Eastbound	Through	2.00	3,200	130	0.041			
	Left	2.00	2,880	180	0.063	*	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	622	0.263		N/S 1:	0.513 *
Southbound	Through	2.00	3,200	758	0.237		N/S 2:	0.315
	Left	1.00	1,600	49	0.031	*	E/W 1:	0.318 *
	Right	0.00	0	43	0.000		E/W 2:	0.317
Westbound	Through	2.00	3,200	567	0.191			
	Left	1.00	1,600	246	0.154	*	V/C Ratio:	0.831
	Right	0.00	0	293	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,250	0.482	*	ITS:	0.000
	Left	2.00	2,880	150	0.052			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.931
Eastbound	Through	2.00	3,200	526	0.164	*		
	Left	2.00	2,880	362	0.126		LOS:	E

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	78	0.041	N/S 1:	0.431
Southbound	Through	2.00	3,200	1,448	0.453 *	N/S 2:	0.457 *
	Left	1.00	1,600	82	0.051	E/W 1:	0.312 *
	Right	1.00	1,600	247	0.129	E/W 2:	0.261
Westbound	Through	2.00	3,200	785	0.245		
	Left	2.00	2,880	686	0.238 *	V/C Ratio:	0.769
	Right	1.00	1,600	500	0.074	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,210	0.380	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	118	0.074 *	ICU:	0.869
Eastbound	Through	2.00	3,200	201	0.063		
	Left	1.00	1,600	25	0.016	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	69	0.031	N/S 1:	0.394 *
Southbound	Through	2.00	3,200	1,255	0.392 *	N/S 2:	0.394
	Left	1.00	1,600	115	0.072 *	E/W 1:	0.377 *
	Right	1.00	1,600	386	0.205	E/W 2:	0.229
Westbound	Through	2.00	3,200	394	0.123		
	Left	2.00	2,880	370	0.128 *	V/C Ratio:	0.771
	Right	1.00	1,600	483	0.173	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,026	0.322 *	ITS:	0.000
	Left	0.00	1,600	3	0.002 *		
	Right [1]	1.00	1,600	248	0.155	ICU:	0.871
Eastbound	Through	2.00	3,200	797	0.249 *		
	Left	1.00	1,600	38	0.024	LOS:	D

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.046
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.267 *
	Left	0.00	0	0	0.000	E/W 1:	0.637 *
	Right	0.00	0	0	0.000	E/W 2:	0.356
Westbound	Through	2.00	3,200	1,139	0.356		
	Left	1.00	1,600	622	0.389 *	V/C Ratio:	0.904
	Right	0.03	50	12	0.046	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.97	2,835	758	0.267 *		
	Right	0.00	0	201	0.000	ICU:	1.004
Eastbound	Through	2.00	3,200	592	0.248 *		
	Left	0.00	0	0	0.000	LOS:	F

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.014
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.208 *
	Left	0.00	0	0	0.000	E/W 1:	0.783 *
	Right	0.00	0	0	0.000	E/W 2:	0.207
Westbound	Through	2.00	3,200	661	0.207		
	Left	1.00	1,600	556	0.348 *	V/C Ratio:	0.991
	Right	0.12	187	35	0.014	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	1.88	2,712	565	0.208 *		
	Right	0.00	0	314	0.000	ICU:	1.091
Eastbound	Through	2.00	3,200	1,077	0.435 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.444
Southbound	Through	1.00	1,600	1,038	0.649 *	N/S 2:	0.649 *
	Left	2.00	2,880	764	0.265	E/W 1:	0.000
	Right	3.00	4,800	1,197	0.117 *	E/W 2:	0.117 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.766
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	856	0.179	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.866
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.673
Southbound	Through	1.00	1,600	1,760	1.100 *	N/S 2:	1.100 *
	Left	2.00	2,880	1,238	0.430	E/W 1:	0.000 *
	Right	3.00	4,800	1,034	0.000	E/W 2:	0.000
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000 *	V/C Ratio:	1.100
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,140	0.243	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.200
Eastbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.224 *
Southbound	Through	2.00	3,200	524	0.168	N/S 2:	0.171
	Left	2.00	2,880	233	0.081 *	E/W 1:	0.199 *
	Right	1.96	3,134	521	0.126	E/W 2:	0.000
Westbound	Through	0.04	66	11	0.166		
	Left	1.00	1,600	283	0.177 *	V/C Ratio:	0.423
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	651	0.143 *	ITS:	0.000
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.523
Eastbound	Through	2.00	3,200	63	0.022 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	20	0.000	N/S 1:	0.300 *
Southbound	Through	2.00	3,200	914	0.292	N/S 2:	0.294
	Left	2.00	2,880	345	0.120 *	E/W 1:	0.093 *
	Right	1.86	2,973	196	0.006	E/W 2:	0.000
Westbound	Through	0.14	227	15	0.066		
	Left	1.00	1,600	113	0.071 *	V/C Ratio:	0.393
	Right	0.00	0	38	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	826	0.180 *	ITS:	0.000
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	19	0.000	ICU:	0.493
Eastbound	Through	2.00	3,200	32	0.022 *		
	Left	0.00	1,600	19	0.012	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	168	0.076	N/S 1:	0.170
Southbound	Through	2.00	3,200	760	0.238 *	N/S 2:	0.271 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.169
	Right	0.00	0	39	0.000	E/W 2:	0.197 *
Westbound	Through	3.00	4,800	630	0.139 *		
	Left	1.00	1,600	55	0.034	V/C Ratio:	0.468
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	689	0.152	ITS:	0.000
	Left	1.00	1,600	52	0.033 *		
	Right	0.00	0	79	0.000	ICU:	0.568
Eastbound	Through	3.00	4,800	567	0.135		
	Left	1.00	1,600	93	0.058 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	206	0.100	N/S 1:	0.219
Southbound	Through	2.00	3,200	1,295	0.405 *	N/S 2:	0.466 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.208
	Right	0.00	0	62	0.000	E/W 2:	0.272 *
Westbound	Through	3.00	4,800	971	0.215 *		
	Left	1.00	1,600	90	0.056	V/C Ratio:	0.738
	Right	0.00	0	56	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	911	0.201	ITS:	0.000
	Left	1.00	1,600	98	0.061 *		
	Right	0.00	0	64	0.000	ICU:	0.838
Eastbound	Through	3.00	4,800	666	0.152		
	Left	1.00	1,600	91	0.057 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.140
Southbound	Through	3.00	4,800	608	0.132 *	N/S 2:	0.185 *
	Left	1.00	1,600	46	0.029	E/W 1:	0.127
	Right	0.00	0	25	0.000	E/W 2:	0.169 *
Westbound	Through	3.00	4,800	721	0.155 *		
	Left	1.00	1,600	41	0.026	V/C Ratio:	0.354
	Right	0.00	0	20	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	515	0.111	ITS:	0.000
	Left	1.00	1,600	85	0.053 *		
	Right	0.00	0	87	0.000	ICU:	0.454
Eastbound	Through	3.00	4,800	400	0.101		
	Left	1.00	1,600	22	0.014 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	36	0.000	N/S 1:	0.206
Southbound	Through	3.00	4,800	713	0.156 *	N/S 2:	0.229 *
	Left	1.00	1,600	64	0.040	E/W 1:	0.214 *
	Right	0.00	0	37	0.000	E/W 2:	0.202
Westbound	Through	3.00	4,800	804	0.175		
	Left	1.00	1,600	32	0.020 *	V/C Ratio:	0.443
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	766	0.166	ITS:	0.000
	Left	1.00	1,600	117	0.073 *		
	Right	0.00	0	104	0.000	ICU:	0.543
Eastbound	Through	3.00	4,800	827	0.194 *		
	Left	1.00	1,600	43	0.027	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.300 *
Southbound	Through	3.00	4,800	1,434	0.299	N/S 2:	0.299
	Left	1.00	1,600	99	0.062 *	E/W 1:	0.078
	Right	0.00	0	0	0.000	E/W 2:	0.278 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.578
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	760	0.238 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	125	0.078	ICU:	0.678
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	800	0.278 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.627 *
Southbound	Through	3.00	4,800	1,203	0.251	N/S 2:	0.251
	Left	1.00	1,600	251	0.157 *	E/W 1:	0.020
	Right	0.00	0	0	0.000	E/W 2:	0.098 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.725
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,503	0.470 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	32	0.020	ICU:	0.825
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	281	0.098 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	920	0.149	N/S 1:	0.295 *
Southbound	Through	3.00	4,800	824	0.172	N/S 2:	0.229
	Left	1.00	1,600	75	0.047 *	E/W 1:	0.393 *
	Right	2.00	3,200	302	0.071	E/W 2:	0.000
Westbound	Through	1.00	1,600	327	0.204 *		
	Left	1.00	1,600	168	0.105	V/C Ratio:	0.688
	Right	0.00	0	352	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,632	0.248 *	ITS:	0.000
	Left	1.00	1,600	91	0.057		
	Right	0.00	0	142	0.000	ICU:	0.788
Eastbound	Through	3.00	4,800	764	0.189 *		
	Left	1.00	1,600	221	0.138	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	357	0.000	N/S 1:	0.267
Southbound	Through	4.00	6,400	1,536	0.240 *	N/S 2:	0.271 *
	Left	1.00	1,600	63	0.039	E/W 1:	0.517 *
	Right	2.00	3,200	577	0.161	E/W 2:	0.000
Westbound	Through	1.00	1,600	233	0.146		
	Left	1.00	1,600	335	0.209 *	V/C Ratio:	0.788
	Right	0.00	0	254	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,567	0.228	ITS:	0.000
	Left	1.00	1,600	49	0.031 *		
	Right	0.00	1,600	492	0.308 *	ICU:	0.888
Eastbound	Through	2.63	2,602	675	0.259		
	Left	1.37	1,978	570	0.288	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	909	0.456	N/S 1:	0.576 *
Southbound	Through	2.00	3,200	1,035	0.323	N/S 2:	0.509
	Left	1.00	1,600	332	0.208 *	E/W 1:	0.226
	Right	1.00	1,600	423	0.161 *	E/W 2:	0.274 *
Westbound	Through	2.00	3,200	247	0.077		
	Left	1.00	1,600	203	0.127	V/C Ratio:	0.850
	Right	1.00	1,600	114	0.008	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,177	0.368 *	ITS:	0.000
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	34	0.000	ICU:	0.950
Eastbound	Through	2.00	3,200	284	0.099		
	Left	1.00	1,600	180	0.113 *	LOS:	E

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	366	0.068	N/S 1:	0.533 *
Southbound	Through	2.00	3,200	1,338	0.418	N/S 2:	0.454
	Left	1.00	1,600	308	0.193 *	E/W 1:	0.421 *
	Right	1.00	1,600	199	0.028	E/W 2:	0.191
Westbound	Through	2.00	3,200	97	0.030		
	Left	1.00	1,600	75	0.047 *	V/C Ratio:	0.954
	Right	1.00	1,600	208	0.107	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,088	0.340 *	ITS:	0.000
	Left	1.00	1,600	58	0.036		
	Right	0.00	0	119	0.000	ICU:	1.054
Eastbound	Through	2.00	3,200	1,077	0.374 *		
	Left	1.00	1,600	257	0.161	LOS:	F

* Critical Movement

FUTURE WITH TRUCK TRAFFIC WITHOUT PROJECT SATURDAY CONDITIONS - YEAR 2025

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	180	0.000		N/S 1:	0.438	*
Southbound	Through	2.00	3,200	827	0.315		N/S 2:	0.401	
	Left	1.00	1,600	318	0.199	*	E/W 1:	0.378	*
	Right	1.00	1,600	249	0.056		E/W 2:	0.358	
Westbound	Through	2.00	3,200	831	0.260				
	Left	1.00	1,600	182	0.114	*	V/C Ratio:	0.816	
	Right	0.00	0	138	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	628	0.239	*	ITS:	0.000	
	Left	1.00	1,600	137	0.086				
	Right	1.00	1,600	122	0.033		ICU:	0.916	
Eastbound	Through	2.00	3,200	846	0.264	*			
	Left	1.00	1,600	157	0.098		LOS:	E	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	203	0.000		N/S 1:	0.280
Southbound	Through	2.00	3,200	1,008	0.378	*	N/S 2:	0.434 *
	Left	1.00	1,600	118	0.074		E/W 1:	0.385 *
	Right	0.00	0	95	0.000		E/W 2:	0.370
Westbound	Through	2.00	3,200	742	0.262			
	Left	1.00	1,600	141	0.088	*	V/C Ratio:	0.819
	Right	0.00	0	70	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	590	0.206		ITS:	0.000
	Left	1.00	1,600	90	0.056	*		
	Right	0.00	0	146	0.000		ICU:	0.919
Eastbound	Through	2.00	3,200	803	0.297	*		
	Left	1.00	1,600	173	0.108		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

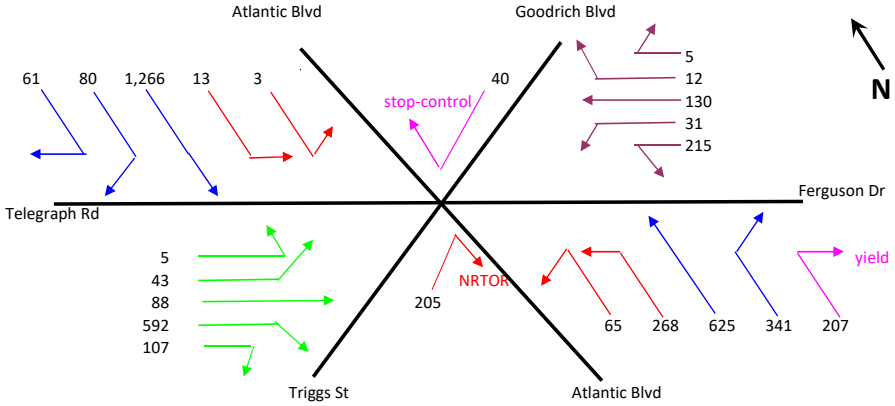
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	61	0.000		N/S 1:	0.348
Southbound	Through	2.00	3,200	929	0.309	*	N/S 2:	0.417 *
	Left	1.00	1,600	68	0.043		E/W 1:	0.288 *
	Right	0.00	0	108	0.000		E/W 2:	0.221
Westbound	Through	2.00	3,200	406	0.161			
	Left	1.00	1,600	99	0.062	*	V/C Ratio:	0.705
	Right	0.00	0	82	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	893	0.305		ITS:	0.000
	Left	1.00	1,600	172	0.108	*		
	Right	0.00	0	183	0.000		ICU:	0.805
Eastbound	Through	2.00	3,200	540	0.226	*		
	Left	1.00	1,600	96	0.060		LOS:	D

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic without Project Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{65 + 268}{2} = 167$ or

Southbound Left: $\frac{13 + 3}{1} = 16$ or

Northbound Right: 205

Critical Volume #1 (CV1): **205**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{625 + 341}{3} = 322$ or

Southbound Through + Right $\frac{1,266 + 80 + 61}{3} = 469$

Critical Volume #2 (CV2): **469**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{215 + 31}{1} = 246$ or

Westbound Through + Right: $\frac{130 + 12 + 5}{2} = 74$ or

Westbound Right: 12 + 5 = 17

Critical Volume #3 (CV3): **246**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 43 + 88}{1} = 136$ or

Eastbound Through: $\frac{592}{3} = 197.3$ or

Eastbound Right: 107

Critical Volume #4 (CV4): **197**

Critical Volume: 205 + 469 + 246 + 197 = **1,117**

Intersection V/C: $\frac{1,117}{1,375} =$ **0.813**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.813** **Intersection LOS:** **D**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	148	0.000		N/S 1:	0.373 *
Southbound	Through	2.00	3,200	1,017	0.364		N/S 2:	0.371
	Left	1.00	1,600	82	0.051	*	E/W 1:	0.102
	Right	0.00	1,600	104	0.065	*	E/W 2:	0.133 *
Westbound	Through	2.00	1,600	15	0.022			
	Left	0.00	1,600	20	0.013		V/C Ratio:	0.506
	Right	0.00	0	7	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,022	0.322	*	ITS:	0.000
	Left	1.00	1,600	11	0.007			
	Right	0.00	0	20	0.000		ICU:	0.606
Eastbound	Through	2.00	1,600	13	0.089			
	Left	0.00	1,600	109	0.068	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.217
Southbound	Through	3.00	4,800	1,047	0.219 *	N/S 2:	0.232 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.016 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.248
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,041	0.217	ITS:	0.000
	Left	1.00	1,600	20	0.013 *		
	Right	0.00	0	25	0.000	ICU:	0.348
Eastbound	Through	1.00	1,600	0	0.016 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	271	0.021		N/S 1:	0.343 *
Southbound	Through	2.00	3,200	562	0.176		N/S 2:	0.187
	Left	1.00	1,600	242	0.151	*	E/W 1:	0.189
	Right	0.00	0	221	0.000		E/W 2:	0.347 *
Westbound	Through	3.00	4,800	727	0.198	*		
	Left	1.00	1,600	47	0.029		V/C Ratio:	0.690
	Right	0.00	0	44	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	569	0.192	*	ITS:	0.000
	Left	1.00	1,600	18	0.011			
	Right	0.00	0	25	0.000		ICU:	0.790
Eastbound	Through	3.00	4,800	744	0.160			
	Left	1.00	1,600	238	0.149	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.429 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.442 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	534	0.167		
	Left	1.00	1,600	376	0.235 *	V/C Ratio:	0.871
	Right	1.00	1,600	874	0.429 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	979	0.340		
	Right	3.00	4,800	1,668	0.008	ICU:	0.971
Eastbound	Through	2.00	3,200	663	0.207 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	186	0.040		N/S 1:	0.201	*
Southbound	Through	1.00	1,600	126	0.097	*	N/S 2:	0.000	
	Left	0.00	1,600	29	0.018		E/W 1:	0.511	*
	Right	0.00	0	13	0.000		E/W 2:	0.318	
Westbound	Through	2.00	3,200	516	0.165				
	Left	2.00	2,880	333	0.116	*	V/C Ratio:	0.712	
	Right	0.00	1,600	86	0.054		Loss Time:	0.100	
Northbound	Through	2.00	1,600	9	0.006		ITS:	0.000	
	Left	1.36	1,965	204	0.104	*			
	Right	0.00	0	72	0.000		ICU:	0.812	
Eastbound	Through	2.00	3,200	1,192	0.395	*			
	Left	1.00	1,600	244	0.153		LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.99	3,187	243	0.000	N/S 1:	0.085 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.01	1,452	123	0.085 *	E/W 1:	0.133
	Right	1.00	1,600	335	0.125	E/W 2:	0.343 *
Westbound	Through	3.00	4,800	608	0.127 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.428
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.528
Eastbound	Through	2.00	3,200	424	0.133		
	Left	2.00	2,880	622	0.216 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	239	0.135 *	N/S 1:	0.134
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.135 *
	Left	1.00	1,600	214	0.134	E/W 1:	0.101
	Right	0.00	0	131	0.000	E/W 2:	0.200 *
Westbound	Through	3.00	4,800	692	0.171 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.335
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.435
Eastbound	Through	3.00	4,800	486	0.101		
	Left	1.00	1,600	47	0.029 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.50	807	62	0.054	N/S 1:	0.085 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.054
	Left	1.50	2,154	184	0.085 *	E/W 1:	0.134
	Right	0.00	0	138	0.000	E/W 2:	0.254 *
Westbound	Through	3.00	4,800	863	0.209 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.339
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.439
Eastbound	Through	3.00	4,800	636	0.133		
	Left	1.00	1,600	72	0.045 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	17	0.000		N/S 1:	0.213	*
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000	
	Left	1.00	1,600	32	0.020		E/W 1:	0.515	*
	Right	0.00	0	57	0.000		E/W 2:	0.198	
Westbound	Through	3.00	4,800	781	0.175				
	Left	1.00	1,600	549	0.343	*	V/C Ratio:	0.728	
	Right	1.00	1,600	235	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	33	0.179	*	ITS:	0.000	
	Left	0.00	1,600	254	0.159				
	Right	0.00	0	65	0.000		ICU:	0.828	
Eastbound	Through	3.00	4,800	761	0.172	*			
	Left	1.00	1,600	36	0.023		LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	548	0.240 *	N/S 1:	0.354
Southbound	Through	2.00	3,200	461	0.144	N/S 2:	0.380 *
	Left	1.00	1,600	40	0.025	E/W 1:	0.225
	Right	0.00	0	35	0.000	E/W 2:	0.285 *
Westbound	Through	2.00	3,200	550	0.183 *		
	Left	1.00	1,600	197	0.123	V/C Ratio:	0.665
	Right	0.00	0	207	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	845	0.329	ITS:	0.000
	Left	2.00	2,880	404	0.140 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.765
Eastbound	Through	2.00	3,200	325	0.102		
	Left	2.00	2,880	295	0.102 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	147	0.092	N/S 1:	0.188
Southbound	Through	2.00	3,200	670	0.209 *	N/S 2:	0.277 *
	Left	1.00	1,600	34	0.021	E/W 1:	0.224
	Right	1.00	1,600	380	0.238 *	E/W 2:	0.247 *
Westbound	Through	2.00	3,200	521	0.163		
	Left	2.00	2,880	317	0.110	V/C Ratio:	0.524
	Right	1.00	1,600	357	0.113	Loss Time:	0.100
Northbound	Through	2.00	3,200	533	0.167	ITS:	0.000
	Left	1.00	1,600	108	0.068 *		
	Right [1]	1.00	1,600	161	0.101	ICU:	0.624
Eastbound	Through	2.00	3,200	364	0.114		
	Left	1.00	1,600	15	0.009 *	LOS:	B

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.053
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.169 *
	Left	0.00	0	0	0.000		E/W 1:	0.454 *
	Right	0.00	0	0	0.000		E/W 2:	0.193
Westbound	Through	2.00	3,200	618	0.193			
	Left	1.00	1,600	316	0.198	*	V/C Ratio:	0.623
	Right	0.09	138	21	0.053		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.91	2,756	465	0.169	*		
	Right	0.00	0	217	0.000		ICU:	0.723
Eastbound	Through	2.00	3,200	602	0.256	*		
	Left	0.00	0	0	0.000		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.452
Southbound	Through	1.00	1,600	1,158	0.724 *	N/S 2:	0.724 *
	Left	2.00	2,880	728	0.253	E/W 1:	0.000
	Right	3.00	4,800	858	0.052 *	E/W 2:	0.052 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.776
	Right	0.00	0	33	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	923	0.199	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.876
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	25	0.000		N/S 1:	0.198	*
Southbound	Through	2.00	3,200	502	0.165		N/S 2:	0.168	
	Left	2.00	2,880	297	0.103	*	E/W 1:	0.157	*
	Right	1.97	3,149	436	0.087		E/W 2:	0.000	
Westbound	Through	0.03	51	7	0.138	*			
	Left	1.00	1,600	44	0.028		V/C Ratio:	0.355	
	Right	0.00	0	40	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	416	0.095	*	ITS:	0.000	
	Left	1.00	1,600	5	0.003				
	Right	0.00	0	9	0.000		ICU:	0.455	
Eastbound	Through	2.00	3,200	44	0.019	*			
	Left	0.00	1,600	7	0.004		LOS:	A	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	209	0.090		N/S 1:	0.193
Southbound	Through	2.00	3,200	832	0.260	*	N/S 2:	0.296 *
	Left	1.00	1,600	50	0.031		E/W 1:	0.146
	Right	0.00	0	65	0.000		E/W 2:	0.191 *
Westbound	Through	3.00	4,800	457	0.109	*		
	Left	1.00	1,600	89	0.056		V/C Ratio:	0.487
	Right	0.00	0	86	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	690	0.162		ITS:	0.000
	Left	1.00	1,600	58	0.036	*		
	Right	0.00	0	54	0.000		ICU:	0.587
Eastbound	Through	3.00	4,800	377	0.090			
	Left	1.00	1,600	131	0.082	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	47	0.000		N/S 1:	0.102
Southbound	Through	3.00	4,800	394	0.092	*	N/S 2:	0.144 *
	Left	1.00	1,600	42	0.026		E/W 1:	0.131 *
	Right	0.00	0	38	0.000		E/W 2:	0.118
Westbound	Through	3.00	4,800	471	0.106			
	Left	1.00	1,600	40	0.025	*	V/C Ratio:	0.275
	Right	0.00	0	33	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	333	0.076		ITS:	0.000
	Left	1.00	1,600	83	0.052	*		
	Right	0.00	0	47	0.000		ICU:	0.375
Eastbound	Through	3.00	4,800	464	0.106	*		
	Left	1.00	1,600	19	0.012		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.387 *
Southbound	Through	3.00	4,800	770	0.160	N/S 2:	0.160
	Left	1.00	1,600	258	0.161 *	E/W 1:	0.055
	Right	0.00	0	0	0.000	E/W 2:	0.273 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.660
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	722	0.226 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	88	0.055	ICU:	0.760
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	785	0.273 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.11	1,769	301	0.059	N/S 1:	0.273 *
Southbound	Through	3.89	6,231	1,060	0.170	N/S 2:	0.213
	Left	1.00	1,600	67	0.042 *	E/W 1:	0.226 *
	Right	2.00	3,200	218	0.047	E/W 2:	0.000
Westbound	Through	1.00	1,600	140	0.088 *		
	Left	1.00	1,600	107	0.067	V/C Ratio:	0.499
	Right	0.00	0	214	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,634	0.231 *	ITS:	0.000
	Left	1.00	1,600	68	0.043		
	Right	0.00	1,600	221	0.138 *	ICU:	0.599
Eastbound	Through	2.55	2,485	248	0.100		
	Left	1.45	2,083	231	0.111	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	174	0.058	N/S 1:	0.392 *
Southbound	Through	2.00	3,200	655	0.205	N/S 2:	0.271
	Left	1.00	1,600	280	0.175 *	E/W 1:	0.135 *
	Right	1.00	1,600	211	0.044	E/W 2:	0.095
Westbound	Through	2.00	3,200	84	0.026		
	Left	1.00	1,600	87	0.054 *	V/C Ratio:	0.527
	Right	1.00	1,600	37	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	694	0.217 *	ITS:	0.000
	Left	1.00	1,600	106	0.066		
	Right	0.00	0	43	0.000	ICU:	0.627
Eastbound	Through	2.00	3,200	217	0.081 *		
	Left	1.00	1,600	81	0.051	LOS:	B

* Critical Movement

FUTURE WITH TRUCK TRAFFIC WITH PROJECT WEEKDAY CONDITIONS - YEAR 2025

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	121	0.000	N/S 1:	0.351 *
Southbound	Through	2.00	3,200	833	0.298	N/S 2:	0.343
	Left	1.00	1,600	174	0.109 *	E/W 1:	0.263
	Right	1.00	1,600	116	0.018	E/W 2:	0.377 *
Westbound	Through	2.00	3,200	1,017	0.318 *		
	Left	1.00	1,600	151	0.094	V/C Ratio:	0.728
	Right	0.00	0	66	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	708	0.242 *	ITS:	0.000
	Left	1.00	1,600	72	0.045		
	Right	1.00	1,600	87	0.032	ICU:	0.828
Eastbound	Through	2.00	3,200	542	0.169		
	Left	1.00	1,600	95	0.059 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	106	0.000	N/S 1:	0.498 *
Southbound	Through	2.00	3,200	975	0.338	N/S 2:	0.408
	Left	1.00	1,600	204	0.128 *	E/W 1:	0.445 *
	Right	1.00	1,600	200	0.061	E/W 2:	0.310
Westbound	Through	2.00	3,200	754	0.236		
	Left	1.00	1,600	162	0.101 *	V/C Ratio:	0.943
	Right	0.00	0	111	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,072	0.370 *	ITS:	0.000
	Left	1.00	1,600	112	0.070		
	Right	1.00	1,600	115	0.037	ICU:	1.043
Eastbound	Through	2.00	3,200	1,102	0.344 *		
	Left	1.00	1,600	118	0.074	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	157	0.000		N/S 1:	0.265	
Southbound	Through	2.00	3,200	808	0.302	*	N/S 2:	0.339	*
	Left	1.00	1,600	100	0.063		E/W 1:	0.295	
	Right	0.00	0	84	0.000		E/W 2:	0.388	*
Westbound	Through	2.00	3,200	960	0.326	*			
	Left	1.00	1,600	140	0.088		V/C Ratio:	0.727	
	Right	0.00	0	45	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	602	0.202		ITS:	0.000	
	Left	1.00	1,600	59	0.037	*			
	Right	0.00	0	92	0.000		ICU:	0.827	
Eastbound	Through	2.00	3,200	571	0.207				
	Left	1.00	1,600	99	0.062	*	LOS:	D	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	130	0.000		N/S 1:	0.410	*
Southbound	Through	2.00	3,200	888	0.318		N/S 2:	0.376	
	Left	1.00	1,600	111	0.069	*	E/W 1:	0.576	*
	Right	0.00	0	109	0.000		E/W 2:	0.367	
Westbound	Through	2.00	3,200	764	0.273				
	Left	1.00	1,600	106	0.066	*	V/C Ratio:	0.986	
	Right	0.00	0	52	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	1,038	0.341	*	ITS:	0.000	
	Left	1.00	1,600	93	0.058				
	Right	0.00	0	137	0.000		ICU:	1.086	
Eastbound	Through	2.00	3,200	1,495	0.510	*			
	Left	1.00	1,600	150	0.094		LOS:	F	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	78	0.000	N/S 1:	0.334
Southbound	Through	2.00	3,200	1,517	0.498 *	N/S 2:	0.562 *
	Left	1.00	1,600	74	0.046	E/W 1:	0.305
	Right	0.00	0	123	0.000	E/W 2:	0.378 *
Westbound	Through	2.00	3,200	900	0.320 *		
	Left	1.00	1,600	177	0.111	V/C Ratio:	0.940
	Right	0.00	0	41	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	881	0.288	ITS:	0.000
	Left	1.00	1,600	102	0.064 *		
	Right	0.00	0	159	0.000	ICU:	1.040
Eastbound	Through	2.00	3,200	462	0.194		
	Left	1.00	1,600	93	0.058 *	LOS:	F

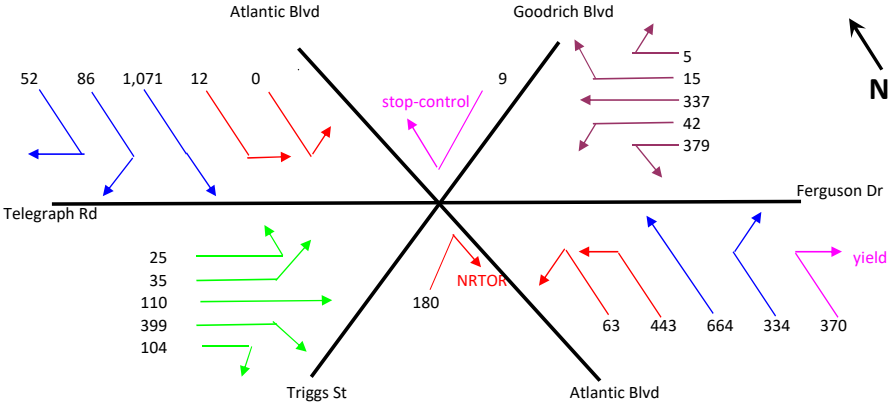
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	33	0.000	N/S 1:	0.534 *
Southbound	Through	2.00	3,200	1,452	0.464	N/S 2:	0.521
	Left	1.00	1,600	68	0.043 *	E/W 1:	0.524 *
	Right	0.00	0	77	0.000	E/W 2:	0.306
Westbound	Through	2.00	3,200	538	0.192		
	Left	1.00	1,600	76	0.048 *	V/C Ratio:	1.058
	Right	0.00	0	90	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,480	0.491 *	ITS:	0.000
	Left	1.00	1,600	91	0.057		
	Right	0.00	0	235	0.000	ICU:	1.158
Eastbound	Through	2.00	3,200	1,287	0.476 *		
	Left	1.00	1,600	183	0.114	LOS:	F

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{63 + 443}{2} = 253$ or

Southbound Left: $\frac{12 + 0}{1} = 12$ or

Northbound Right: 180

Critical Volume #1 (CV1): **253**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{664 + 334}{3} = 333$ or

Southbound Through + Right $\frac{1,071 + 86 + 52}{3} = 403$

Critical Volume #2 (CV2): **403**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{379 + 42}{1} = 421$ or

Westbound Through + Right: $\frac{337 + 15 + 5}{2} = 179$ or

Westbound Right: 15 + 5 = 20

Critical Volume #3 (CV3): **421**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{25 + 35 + 110}{1} = 170$ or

Eastbound Through: $\frac{399}{3} = 133$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **170**

Critical Volume: 253 + 403 + 421 + 170 = **1,247**

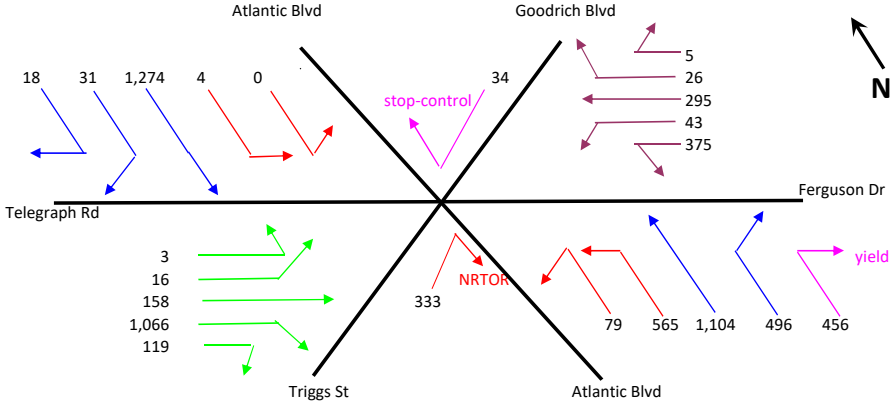
Intersection V/C: $\frac{1,247}{1,375} = $ **0.907**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.907** **Intersection LOS:** **E**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{79 + 565}{2} = 322$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 333

Critical Volume #1 (CV1): **333**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{1,104 + 496}{3} = 533$ or

Southbound Through + Right $\frac{1,274 + 31 + 18}{3} = 441$

Critical Volume #2 (CV2): **533**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{375 + 43}{1} = 418$ or

Westbound Through + Right: $\frac{295 + 26 + 5}{2} = 163$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **418**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 16 + 158}{1} = 177$ or

Eastbound Through: $\frac{1,066}{3} = 355.3$ or

Eastbound Right: 119

Critical Volume #4 (CV4): **355**

Critical Volume: 333 + 533 + 418 + 355 = **1,640**

Intersection V/C: $\frac{1,640}{1,375} =$ **1.192**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **1.192** **Intersection LOS:** **F**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	263	0.000	N/S 1:	0.431
Southbound	Through	2.00	3,200	1,505	0.553 *	N/S 2:	0.574 *
	Left	1.00	1,600	221	0.138	E/W 1:	0.100
	Right	0.00	1,600	266	0.166 *	E/W 2:	0.207 *
Westbound	Through	2.00	1,600	128	0.122		
	Left	0.00	1,600	67	0.042	V/C Ratio:	0.781
	Right	0.00	0	81	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	857	0.293	ITS:	0.000
	Left	1.00	1,600	34	0.021 *		
	Right	0.00	0	9	0.000	ICU:	0.881
Eastbound	Through	2.00	1,600	18	0.058		
	Left	0.00	1,600	66	0.041 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	219	0.000	N/S 1:	0.577 *
Southbound	Through	2.00	3,200	1,592	0.566	N/S 2:	0.572
	Left	1.00	1,600	159	0.099 *	E/W 1:	0.353 *
	Right	0.00	1,600	178	0.111	E/W 2:	0.294
Westbound	Through	2.00	1,600	29	0.056		
	Left	0.00	1,600	60	0.038 *	V/C Ratio:	0.930
	Right	0.00	0	45	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,485	0.478 *	ITS:	0.000
	Left	1.00	1,600	9	0.006		
	Right	0.00	0	29	0.000	ICU:	1.030
Eastbound	Through	2.00	1,600	182	0.315 *		
	Left	0.00	1,600	293	0.183	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	15	0.000	N/S 1:	0.258
Southbound	Through	3.00	4,800	1,675	0.352 *	N/S 2:	0.408 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.025 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.433
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,238	0.258	ITS:	0.000
	Left	1.00	1,600	90	0.056 *		
	Right	0.00	0	40	0.000	ICU:	0.533
Eastbound	Through	1.00	1,600	0	0.025 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.347 *
Southbound	Through	3.00	4,800	1,526	0.319	N/S 2:	0.333
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.050 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.397
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,667	0.347 *	ITS:	0.000
	Left	1.00	1,600	23	0.014		
	Right	0.00	0	80	0.000	ICU:	0.497
Eastbound	Through	1.00	1,600	0	0.050 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	335	0.067	N/S 1:	0.334 *
Southbound	Through	2.00	3,200	957	0.299	N/S 2:	0.327
	Left	1.00	1,600	217	0.136 *	E/W 1:	0.194
	Right	0.00	0	185	0.000	E/W 2:	0.460 *
Westbound	Through	3.00	4,800	1,336	0.317 *		
	Left	1.00	1,600	60	0.038	V/C Ratio:	0.794
	Right	0.00	0	20	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	615	0.198 *	ITS:	0.000
	Left	1.00	1,600	44	0.028		
	Right	0.00	0	36	0.000	ICU:	0.894
Eastbound	Through	3.00	4,800	713	0.156		
	Left	1.00	1,600	228	0.143 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	351	0.048	N/S 1:	0.547 *
Southbound	Through	2.00	3,200	934	0.292	N/S 2:	0.310
	Left	1.00	1,600	347	0.217 *	E/W 1:	0.310
	Right	0.00	0	218	0.000	E/W 2:	0.405 *
Westbound	Through	3.00	4,800	903	0.234 *		
	Left	1.00	1,600	56	0.035	V/C Ratio:	0.952
	Right	0.00	0	70	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	985	0.330 *	ITS:	0.000
	Left	1.00	1,600	28	0.018		
	Right	0.00	0	40	0.000	ICU:	1.052
Eastbound	Through	3.00	4,800	1,279	0.275		
	Left	1.00	1,600	274	0.171 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.470 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.308 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	520	0.163		
	Left	1.00	1,600	271	0.169 *	V/C Ratio:	0.778
	Right	1.00	1,600	787	0.407	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,355	0.470 *		
	Right	3.00	4,800	1,510	0.000	ICU:	0.878
Eastbound	Through	2.00	3,200	446	0.139 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.572 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.671 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	1,020	0.319		
	Left	1.00	1,600	703	0.439 *	V/C Ratio:	1.243
	Right	1.00	1,600	834	0.302	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	1,648	0.572 *		
	Right	3.00	4,800	2,331	0.000	ICU:	1.343
Eastbound	Through	2.00	3,200	743	0.232 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	72	0.000	N/S 1:	0.156 *
Southbound	Through	1.00	1,600	70	0.048 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.336
	Right	0.00	0	9	0.000	E/W 2:	0.350 *
Westbound	Through	2.00	3,200	472	0.150 *		
	Left	2.00	2,880	289	0.100	V/C Ratio:	0.506
	Right	0.00	1,600	23	0.014	Loss Time:	0.100
Northbound	Through	2.00	1,600	16	0.010	ITS:	0.000
	Left	1.75	2,518	271	0.108 *		
	Right	0.00	0	67	0.000	ICU:	0.606
Eastbound	Through	2.00	3,200	689	0.236		
	Left	1.00	1,600	320	0.200 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	360	0.149	N/S 1:	0.311 *
Southbound	Through	1.00	1,600	287	0.193 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.580 *
	Right	0.00	0	7	0.000	E/W 2:	0.456
Westbound	Through	2.00	3,200	967	0.304		
	Left	2.00	2,880	477	0.166 *	V/C Ratio:	0.891
	Right	0.00	1,600	50	0.031	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	0.000
	Left	1.64	2,362	278	0.118 *		
	Right	0.00	0	124	0.000	ICU:	0.991
Eastbound	Through	2.00	3,200	1,201	0.414 *		
	Left	1.00	1,600	243	0.152	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.97	3,149	82	0.000	N/S 1:	0.029 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.03	1,486	43	0.029 *	E/W 1:	0.128
	Right	1.00	1,600	92	0.029	E/W 2:	0.248 *
Westbound	Through	3.00	4,800	840	0.175 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.277
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.377
Eastbound	Through	2.00	3,200	410	0.128		
	Left	2.00	2,880	211	0.073 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	500	0.074	N/S 1:	0.156 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.074
	Left	1.00	1,600	249	0.156 *	E/W 1:	0.238
	Right	1.00	1,600	268	0.012	E/W 2:	0.336 *
Westbound	Through	3.00	4,800	819	0.171 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.492
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.592
Eastbound	Through	2.00	3,200	763	0.238		
	Left	2.00	2,880	475	0.165 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	29	0.000	N/S 1:	0.023 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	37	0.023 *	E/W 1:	0.075
	Right	0.00	0	118	0.000	E/W 2:	0.264 *
Westbound	Through	3.00	4,800	909	0.214 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.287
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.387
Eastbound	Through	3.00	4,800	360	0.075		
	Left	1.00	1,600	80	0.050 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	177	0.080	N/S 1:	0.161 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.080
	Left	1.00	1,600	257	0.161 *	E/W 1:	0.196
	Right	0.00	0	126	0.000	E/W 2:	0.274 *
Westbound	Through	3.00	4,800	897	0.213 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.435
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.535
Eastbound	Through	3.00	4,800	941	0.196		
	Left	1.00	1,600	97	0.061 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.48	772	48	0.041	N/S 1:	0.069 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.041
	Left	1.52	2,185	151	0.069 *	E/W 1:	0.066
	Right	0.00	0	216	0.000	E/W 2:	0.289 *
Westbound	Through	3.00	4,800	960	0.246 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.358
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.458
Eastbound	Through	3.00	4,800	305	0.064		
	Left	1.00	1,600	68	0.043 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.44	705	100	0.108	N/S 1:	0.158 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.108
	Left	1.56	2,246	354	0.158 *	E/W 1:	0.229
	Right	0.00	0	171	0.000	E/W 2:	0.285 *
Westbound	Through	3.00	4,800	866	0.216 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.443
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.543
Eastbound	Through	3.00	4,800	1,101	0.229		
	Left	1.00	1,600	110	0.069 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.159 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.458 *
	Right	0.00	0	10	0.000	E/W 2:	0.199
Westbound	Through	3.00	4,800	943	0.199		
	Left	1.00	1,600	584	0.365 *	V/C Ratio:	0.617
	Right	1.00	1,600	350	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.142 *	ITS:	0.000
	Left	0.00	1,600	222	0.139		
	Right	0.00	0	37	0.000	ICU:	0.717
Eastbound	Through	3.00	4,800	409	0.093 *		
	Left	1.00	1,600	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.204 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.716 *
	Right	0.00	0	56	0.000	E/W 2:	0.199
Westbound	Through	3.00	4,800	789	0.176		
	Left	1.00	1,600	705	0.441 *	V/C Ratio:	0.920
	Right	1.00	1,600	247	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.143 *	ITS:	0.000
	Left	0.00	1,600	215	0.134		
	Right	0.00	0	68	0.000	ICU:	1.020
Eastbound	Through	3.00	4,800	1,250	0.275 *		
	Left	1.00	1,600	36	0.023	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	612	0.286	N/S 1:	0.483 *
Southbound	Through	2.00	3,200	901	0.282	N/S 2:	0.340
	Left	1.00	1,600	35	0.022 *	E/W 1:	0.228
	Right	0.00	0	58	0.000	E/W 2:	0.340 *
Westbound	Through	2.00	3,200	720	0.243 *		
	Left	1.00	1,600	293	0.183	V/C Ratio:	0.823
	Right	0.00	0	174	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,300	0.461 *	ITS:	0.000
	Left	2.00	2,880	156	0.054		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.923
Eastbound	Through	2.00	3,200	144	0.045		
	Left	2.00	2,880	279	0.097 *	LOS:	E

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	670	0.256	N/S 1:	0.546 *
Southbound	Through	2.00	3,200	809	0.253	N/S 2:	0.326
	Left	1.00	1,600	74	0.046 *	E/W 1:	0.343
	Right	0.00	0	52	0.000	E/W 2:	0.376 *
Westbound	Through	2.00	3,200	629	0.213 *		
	Left	1.00	1,600	246	0.154	V/C Ratio:	0.922
	Right	0.00	0	293	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,307	0.500 *	ITS:	0.000
	Left	2.00	2,880	203	0.070		
	Right [1]	1.00	1,600	0	0.000	ICU:	1.022
Eastbound	Through	2.00	3,200	605	0.189		
	Left	2.00	2,880	470	0.163 *	LOS:	F

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	78	0.041	N/S 1:	0.431
Southbound	Through	2.00	3,200	1,448	0.453 *	N/S 2:	0.457 *
	Left	1.00	1,600	82	0.051	E/W 1:	0.320 *
	Right	1.00	1,600	247	0.129	E/W 2:	0.277
Westbound	Through	2.00	3,200	836	0.261		
	Left	2.00	2,880	686	0.238 *	V/C Ratio:	0.777
	Right	1.00	1,600	500	0.074	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,210	0.380	ITS:	0.000
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	131	0.082 *	ICU:	0.877
Eastbound	Through	2.00	3,200	212	0.066		
	Left	1.00	1,600	25	0.016	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	69	0.031	N/S 1:	0.394 *
Southbound	Through	2.00	3,200	1,255	0.392 *	N/S 2:	0.394
	Left	1.00	1,600	115	0.072 *	E/W 1:	0.390 *
	Right	1.00	1,600	386	0.205	E/W 2:	0.229
Westbound	Through	2.00	3,200	448	0.140		
	Left	2.00	2,880	370	0.128 *	V/C Ratio:	0.784
	Right	1.00	1,600	483	0.173	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,026	0.322 *	ITS:	0.000
	Left	0.00	1,600	3	0.002 *		
	Right [1]	1.00	1,600	298	0.186	ICU:	0.884
Eastbound	Through	2.00	3,200	838	0.262 *		
	Left	1.00	1,600	38	0.024	LOS:	D

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.056
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.278 *
	Left	0.00	0	0	0.000		E/W 1:	0.640 *
	Right	0.00	0	0	0.000		E/W 2:	0.363
Westbound	Through	2.00	3,200	1,160	0.363			
	Left	1.00	1,600	622	0.389	*	V/C Ratio:	0.918
	Right	0.03	48	12	0.056		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.97	2,837	788	0.278	*		
	Right	0.00	0	201	0.000		ICU:	1.018
Eastbound	Through	2.00	3,200	603	0.251	*		
	Left	0.00	0	0	0.000		LOS:	F

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.019
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.214 *
	Left	0.00	0	0	0.000		E/W 1:	0.796 *
	Right	0.00	0	0	0.000		E/W 2:	0.218
Westbound	Through	2.00	3,200	698	0.218			
	Left	1.00	1,600	556	0.348	*	V/C Ratio:	1.010
	Right	0.11	182	35	0.019		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.89	2,717	582	0.214	*		
	Right	0.00	0	314	0.000		ICU:	1.110
Eastbound	Through	2.00	3,200	1,118	0.448	*		
	Left	0.00	0	0	0.000		LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.455
Southbound	Through	1.00	1,600	1,051	0.657 *	N/S 2:	0.657 *
	Left	2.00	2,880	781	0.271	E/W 1:	0.000
	Right	3.00	4,800	1,277	0.130 *	E/W 2:	0.130 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.787
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	881	0.184	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.887
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.708
Southbound	Through	1.00	1,600	1,819	1.137 *	N/S 2:	1.137 *
	Left	2.00	2,880	1,304	0.453	E/W 1:	0.000
	Right	3.00	4,800	1,237	0.031 *	E/W 2:	0.031 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	1.168
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,195	0.255	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.268
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.232 *
Southbound	Through	2.00	3,200	535	0.171	N/S 2:	0.174
	Left	2.00	2,880	239	0.083 *	E/W 1:	0.205 *
	Right	1.96	3,140	576	0.142	E/W 2:	0.000
Westbound	Through	0.04	60	11	0.183 *		
	Left	1.00	1,600	283	0.177	V/C Ratio:	0.437
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	676	0.149 *	ITS:	0.000
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.537
Eastbound	Through	2.00	3,200	63	0.022 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	20	0.000	N/S 1:	0.317 *
Southbound	Through	2.00	3,200	955	0.305	N/S 2:	0.307
	Left	2.00	2,880	370	0.128 *	E/W 1:	0.138 *
	Right	1.92	3,070	355	0.051	E/W 2:	0.000
Westbound	Through	0.08	130	15	0.116 *		
	Left	1.00	1,600	113	0.071	V/C Ratio:	0.455
	Right	0.00	0	38	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	870	0.189 *	ITS:	0.000
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	19	0.000	ICU:	0.555
Eastbound	Through	2.00	3,200	32	0.022 *		
	Left	0.00	1,600	19	0.012	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	168	0.076		N/S 1:	0.175	
Southbound	Through	2.00	3,200	773	0.242	*	N/S 2:	0.275	*
	Left	1.00	1,600	28	0.018		E/W 1:	0.176	
	Right	0.00	0	39	0.000		E/W 2:	0.201	*
Westbound	Through	3.00	4,800	648	0.143	*			
	Left	1.00	1,600	55	0.034		V/C Ratio:	0.476	
	Right	0.00	0	40	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	714	0.157		ITS:	0.000	
	Left	1.00	1,600	52	0.033	*			
	Right	0.00	0	79	0.000		ICU:	0.576	
Eastbound	Through	3.00	4,800	601	0.142				
	Left	1.00	1,600	93	0.058	*	LOS:	A	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	206	0.100		N/S 1:	0.231	
Southbound	Through	2.00	3,200	1,354	0.423	*	N/S 2:	0.484	*
	Left	1.00	1,600	28	0.018		E/W 1:	0.220	
	Right	0.00	0	62	0.000		E/W 2:	0.285	*
Westbound	Through	3.00	4,800	1,034	0.228	*			
	Left	1.00	1,600	90	0.056		V/C Ratio:	0.769	
	Right	0.00	0	56	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	966	0.213		ITS:	0.000	
	Left	1.00	1,600	98	0.061	*			
	Right	0.00	0	64	0.000		ICU:	0.869	
Eastbound	Through	3.00	4,800	721	0.164				
	Left	1.00	1,600	91	0.057	*	LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.146
Southbound	Through	3.00	4,800	619	0.134 *	N/S 2:	0.187 *
	Left	1.00	1,600	46	0.029	E/W 1:	0.135
	Right	0.00	0	25	0.000	E/W 2:	0.173 *
Westbound	Through	3.00	4,800	739	0.159 *		
	Left	1.00	1,600	42	0.026	V/C Ratio:	0.360
	Right	0.00	0	22	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	540	0.117	ITS:	0.000
	Left	1.00	1,600	85	0.053 *		
	Right	0.00	0	87	0.000	ICU:	0.460
Eastbound	Through	3.00	4,800	434	0.109		
	Left	1.00	1,600	22	0.014 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	36	0.000	N/S 1:	0.216
Southbound	Through	3.00	4,800	754	0.165 *	N/S 2:	0.238 *
	Left	1.00	1,600	64	0.040	E/W 1:	0.226 *
	Right	0.00	0	37	0.000	E/W 2:	0.215
Westbound	Through	3.00	4,800	867	0.188		
	Left	1.00	1,600	34	0.021 *	V/C Ratio:	0.464
	Right	0.00	0	33	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	810	0.176	ITS:	0.000
	Left	1.00	1,600	117	0.073 *		
	Right	0.00	0	104	0.000	ICU:	0.564
Eastbound	Through	3.00	4,800	882	0.205 *		
	Left	1.00	1,600	43	0.027	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.326 *
Southbound	Through	3.00	4,800	1,453	0.303	N/S 2:	0.303
	Left	1.00	1,600	123	0.077 *	E/W 1:	0.078
	Right	0.00	0	0	0.000	E/W 2:	0.294 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.620
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	796	0.249 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	125	0.078	ICU:	0.720
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	847	0.294 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.701 *
Southbound	Through	3.00	4,800	1,267	0.264	N/S 2:	0.264
	Left	1.00	1,600	342	0.214 *	E/W 1:	0.020
	Right	0.00	0	0	0.000	E/W 2:	0.107 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.808
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,559	0.487 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	32	0.020	ICU:	0.908
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	307	0.107 *	LOS:	E

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	921	0.148	N/S 1:	0.298 *
Southbound	Through	3.00	4,800	836	0.174	N/S 2:	0.231
	Left	1.00	1,600	75	0.047 *	E/W 1:	0.394 *
	Right	2.00	3,200	302	0.071	E/W 2:	0.000
Westbound	Through	1.00	1,600	328	0.205 *		
	Left	1.00	1,600	168	0.105	V/C Ratio:	0.692
	Right	0.00	0	352	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,655	0.251 *	ITS:	0.000
	Left	1.00	1,600	91	0.057		
	Right	0.00	0	142	0.000	ICU:	0.792
Eastbound	Through	3.00	4,800	766	0.189 *		
	Left	1.00	1,600	223	0.139	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	364	0.000	N/S 1:	0.273
Southbound	Through	4.00	6,400	1,589	0.248 *	N/S 2:	0.279 *
	Left	1.00	1,600	63	0.039	E/W 1:	0.517 *
	Right	2.00	3,200	577	0.161	E/W 2:	0.000
Westbound	Through	1.00	1,600	235	0.147		
	Left	1.00	1,600	335	0.209 *	V/C Ratio:	0.796
	Right	0.00	0	254	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,616	0.234	ITS:	0.000
	Left	1.00	1,600	49	0.031 *		
	Right	0.00	1,600	492	0.308 *	ICU:	0.896
Eastbound	Through	2.62	2,592	676	0.261		
	Left	1.38	1,987	576	0.290	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	909	0.456	N/S 1:	0.582 *
Southbound	Through	2.00	3,200	1,037	0.324	N/S 2:	0.509
	Left	1.00	1,600	343	0.214 *	E/W 1:	0.226
	Right	1.00	1,600	423	0.157 *	E/W 2:	0.270 *
Westbound	Through	2.00	3,200	247	0.077		
	Left	1.00	1,600	203	0.127	V/C Ratio:	0.852
	Right	1.00	1,600	114	0.008	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,177	0.368 *	ITS:	0.000
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	34	0.000	ICU:	0.952
Eastbound	Through	2.00	3,200	284	0.099		
	Left	1.00	1,600	180	0.113 *	LOS:	E

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	366	0.068	N/S 1:	0.558 *
Southbound	Through	2.00	3,200	1,346	0.421	N/S 2:	0.457
	Left	1.00	1,600	349	0.218 *	E/W 1:	0.421 *
	Right	1.00	1,600	199	0.015	E/W 2:	0.191
Westbound	Through	2.00	3,200	97	0.030		
	Left	1.00	1,600	75	0.047 *	V/C Ratio:	0.979
	Right	1.00	1,600	208	0.107	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,088	0.340 *	ITS:	0.000
	Left	1.00	1,600	58	0.036		
	Right	0.00	0	119	0.000	ICU:	1.079
Eastbound	Through	2.00	3,200	1,077	0.374 *		
	Left	1.00	1,600	257	0.161	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	180	0.000		N/S 1:	0.445 *
Southbound	Through	2.00	3,200	849	0.322		N/S 2:	0.413
	Left	1.00	1,600	318	0.199	*	E/W 1:	0.379 *
	Right	1.00	1,600	249	0.056		E/W 2:	0.359
Westbound	Through	2.00	3,200	834	0.261			
	Left	1.00	1,600	182	0.114	*	V/C Ratio:	0.824
	Right	0.00	0	138	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	648	0.246	*	ITS:	0.000
	Left	1.00	1,600	146	0.091			
	Right	1.00	1,600	132	0.037		ICU:	0.924
Eastbound	Through	2.00	3,200	849	0.265	*		
	Left	1.00	1,600	157	0.098		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	203	0.000		N/S 1:	0.289
Southbound	Through	2.00	3,200	1,040	0.388	*	N/S 2:	0.450 *
	Left	1.00	1,600	118	0.074		E/W 1:	0.396 *
	Right	0.00	0	95	0.000		E/W 2:	0.370
Westbound	Through	2.00	3,200	744	0.262			
	Left	1.00	1,600	153	0.096	*	V/C Ratio:	0.846
	Right	0.00	0	70	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	619	0.215		ITS:	0.000
	Left	1.00	1,600	99	0.062	*		
	Right	0.00	0	156	0.000		ICU:	0.946
Eastbound	Through	2.00	3,200	805	0.300	*		
	Left	1.00	1,600	173	0.108		LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

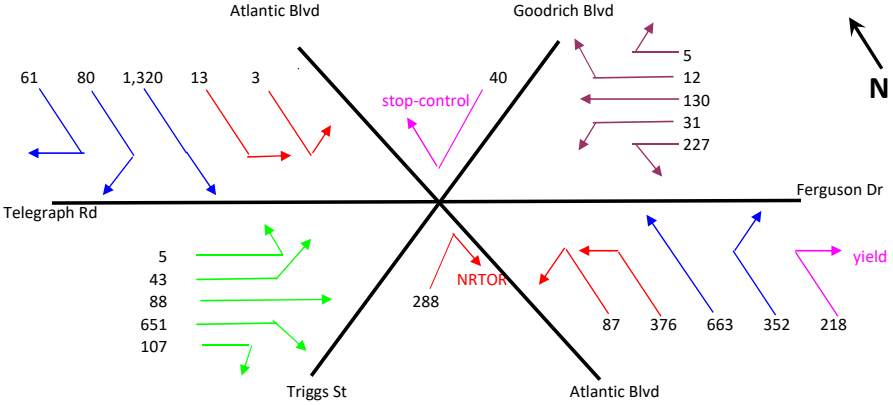
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	61	0.000		N/S 1:	0.352
Southbound	Through	2.00	3,200	944	0.314	*	N/S 2:	0.423 *
	Left	1.00	1,600	68	0.043		E/W 1:	0.289 *
	Right	0.00	0	108	0.000		E/W 2:	0.221
Westbound	Through	2.00	3,200	406	0.161			
	Left	1.00	1,600	99	0.062	*	V/C Ratio:	0.712
	Right	0.00	0	82	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	907	0.309		ITS:	0.000
	Left	1.00	1,600	174	0.109	*		
	Right	0.00	0	185	0.000		ICU:	0.812
Eastbound	Through	2.00	3,200	540	0.227	*		
	Left	1.00	1,600	96	0.060		LOS:	D

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{87 + 376}{2} = 232$ or

Southbound Left: $\frac{13 + 3}{1} = 16$ or

Northbound Right: 288

Critical Volume #1 (CV1): **288**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{663 + 352}{3} = 338$ or

Southbound Through + Right $\frac{1,320 + 80 + 61}{3} = 487$

Critical Volume #2 (CV2): **487**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{227 + 31}{1} = 258$ or

Westbound Through + Right: $\frac{130 + 12 + 5}{2} = 74$ or

Westbound Right: 12 + 5 = 17

Critical Volume #3 (CV3): **258**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 43 + 88}{1} = 136$ or

Eastbound Through: $\frac{651}{3} = 217$ or

Eastbound Right: 107

Critical Volume #4 (CV4): **217**

Critical Volume: 288 + 487 + 258 + 217 = **1,250**

Intersection V/C: $\frac{1,250}{1,375} = $ **0.909**

ATSAC/ATCS Credit: 0.00

Final intersection V/C: **0.909** **Intersection LOS:** **E**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	148	0.000	N/S 1:	0.377 *
Southbound	Through	2.00	3,200	1,034	0.369	N/S 2:	0.376
	Left	1.00	1,600	82	0.051 *	E/W 1:	0.102
	Right	0.00	1,600	104	0.065 *	E/W 2:	0.133 *
Westbound	Through	2.00	1,600	15	0.022		
	Left	0.00	1,600	20	0.013	V/C Ratio:	0.510
	Right	0.00	0	7	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,037	0.326 *	ITS:	0.000
	Left	1.00	1,600	11	0.007		
	Right	0.00	0	20	0.000	ICU:	0.610
Eastbound	Through	2.00	1,600	13	0.089		
	Left	0.00	1,600	109	0.068 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.234
Southbound	Through	3.00	4,800	1,135	0.237 *	N/S 2:	0.250 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.016 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.266
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,121	0.234	ITS:	0.000
	Left	1.00	1,600	20	0.013 *		
	Right	0.00	0	25	0.000	ICU:	0.366
Eastbound	Through	1.00	1,600	0	0.016 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	288	0.022		N/S 1:	0.343 *
Southbound	Through	2.00	3,200	562	0.176		N/S 2:	0.187
	Left	1.00	1,600	242	0.151	*	E/W 1:	0.203
	Right	0.00	0	221	0.000		E/W 2:	0.370 *
Westbound	Through	3.00	4,800	798	0.212	*		
	Left	1.00	1,600	47	0.029		V/C Ratio:	0.713
	Right	0.00	0	44	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	569	0.192	*	ITS:	0.000
	Left	1.00	1,600	18	0.011			
	Right	0.00	0	25	0.000		ICU:	0.813
Eastbound	Through	3.00	4,800	809	0.174			
	Left	1.00	1,600	253	0.158	*	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.634 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.611 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	723	0.226		
	Left	1.00	1,600	542	0.339 *	V/C Ratio:	1.245
	Right	1.00	1,600	1,285	0.634 *	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	0.000
	Left	2.00	2,880	979	0.340		
	Right	3.00	4,800	1,668	0.008	ICU:	1.345
Eastbound	Through	2.00	3,200	871	0.272 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	241	0.037		N/S 1:	0.247	*
Southbound	Through	1.00	1,600	181	0.131	*	N/S 2:	0.000	
	Left	0.00	1,600	29	0.018		E/W 1:	0.734	*
	Right	0.00	0	13	0.000		E/W 2:	0.487	
Westbound	Through	2.00	3,200	816	0.259				
	Left	2.00	2,880	526	0.183	*	V/C Ratio:	0.981	
	Right	0.00	1,600	121	0.076		Loss Time:	0.100	
Northbound	Through	2.00	1,600	9	0.006		ITS:	0.000	
	Left	1.22	1,759	204	0.116	*			
	Right	0.00	0	72	0.000		ICU:	1.081	
Eastbound	Through	2.00	3,200	1,690	0.551	*			
	Left	1.00	1,600	365	0.228		LOS:	F	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.79	2,865	462	0.008	N/S 1:	0.179 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.008
	Left	1.21	1,741	312	0.179 *	E/W 1:	0.226
	Right	1.00	1,600	521	0.146	E/W 2:	0.502 *
Westbound	Through	3.00	4,800	936	0.195 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.681
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.781
Eastbound	Through	2.00	3,200	722	0.226		
	Left	2.00	2,880	885	0.307 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	1.00	1,600	339	0.159		N/S 1:	0.196	*
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.159	
	Left	1.00	1,600	314	0.196	*	E/W 1:	0.178	
	Right	0.00	0	230	0.000		E/W 2:	0.384	*
Westbound	Through	3.00	4,800	1,107	0.279	*			
	Left	0.00	0	0	0.000		V/C Ratio:	0.580	
	Right	0.00	0	0	0.000		Loss Time:	0.100	
Northbound	Through	0.00	0	0	0.000	*	ITS:	0.000	
	Left	0.00	0	0	0.000				
	Right	0.00	0	0	0.000		ICU:	0.680	
Eastbound	Through	3.00	4,800	852	0.178				
	Left	1.00	1,600	168	0.105	*	LOS:	B	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.56	889	92	0.072	N/S 1:	0.115 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.072
	Left	1.44	2,080	239	0.115 *	E/W 1:	0.207
	Right	0.00	0	196	0.000	E/W 2:	0.363 *
Westbound	Through	3.00	4,800	1,245	0.300 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.478
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.578
Eastbound	Through	3.00	4,800	988	0.206		
	Left	1.00	1,600	100	0.063 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	17	0.000		N/S 1:	0.315 *
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000
	Left	1.00	1,600	32	0.020		E/W 1:	0.602 *
	Right	0.00	0	57	0.000		E/W 2:	0.256
Westbound	Through	3.00	4,800	1,059	0.233			
	Left	1.00	1,600	552	0.345	*	V/C Ratio:	0.917
	Right	1.00	1,600	235	0.000		Loss Time:	0.100
Northbound	Through	1.00	1,600	33	0.281	*	ITS:	0.000
	Left	0.00	1,600	416	0.260			
	Right	0.00	0	83	0.000		ICU:	1.017
Eastbound	Through	3.00	4,800	1,149	0.257	*		
	Left	1.00	1,600	36	0.023		LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	625	0.231		N/S 1:	0.403 *
Southbound	Through	2.00	3,200	521	0.163		N/S 2:	0.401
	Left	1.00	1,600	70	0.044	*	E/W 1:	0.259
	Right	0.00	0	50	0.000		E/W 2:	0.379 *
Westbound	Through	2.00	3,200	651	0.219	*		
	Left	1.00	1,600	197	0.123		V/C Ratio:	0.782
	Right	0.00	0	207	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	941	0.359	*	ITS:	0.000
	Left	2.00	2,880	490	0.170			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.882
Eastbound	Through	2.00	3,200	435	0.136			
	Left	2.00	2,880	461	0.160	*	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	0%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	147	0.092	N/S 1:	0.188
Southbound	Through	2.00	3,200	670	0.209 *	N/S 2:	0.277 *
	Left	1.00	1,600	34	0.021	E/W 1:	0.251 *
	Right	1.00	1,600	380	0.238	E/W 2:	0.247
Westbound	Through	2.00	3,200	608	0.190		
	Left	2.00	2,880	317	0.110 *	V/C Ratio:	0.528
	Right	1.00	1,600	357	0.113	Loss Time:	0.100
Northbound	Through	2.00	3,200	533	0.167	ITS:	0.000
	Left	1.00	1,600	108	0.068 *		
	Right [1]	1.00	1,600	226	0.141 *	ICU:	0.628
Eastbound	Through	2.00	3,200	418	0.131		
	Left	1.00	1,600	15	0.009	LOS:	B

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.062
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.178 *
	Left	0.00	0	0	0.000		E/W 1:	0.471 *
	Right	0.00	0	0	0.000		E/W 2:	0.212
Westbound	Through	2.00	3,200	677	0.212			
	Left	1.00	1,600	316	0.198	*	V/C Ratio:	0.649
	Right	0.08	131	21	0.062		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	0.000
	Left	1.92	2,762	493	0.178	*		
	Right	0.00	0	217	0.000		ICU:	0.749
Eastbound	Through	2.00	3,200	656	0.273	*		
	Left	0.00	0	0	0.000		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.501
Southbound	Through	1.00	1,600	1,238	0.774 *	N/S 2:	0.774 *
	Left	2.00	2,880	814	0.283	E/W 1:	0.000
	Right	3.00	4,800	1,182	0.105 *	E/W 2:	0.105 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.879
	Right	0.00	0	33	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,011	0.218	ITS:	0.000
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.979
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.224 *
Southbound	Through	2.00	3,200	556	0.182	N/S 2:	0.185
	Left	2.00	2,880	329	0.114 *	E/W 1:	0.236 *
	Right	1.98	3,168	689	0.160	E/W 2:	0.000
Westbound	Through	0.02	32	7	0.217 *		
	Left	1.00	1,600	44	0.028	V/C Ratio:	0.460
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	487	0.110 *	ITS:	0.000
	Left	1.00	1,600	5	0.003		
	Right	0.00	0	9	0.000	ICU:	0.560
Eastbound	Through	2.00	3,200	44	0.019 *		
	Left	0.00	1,600	7	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	209	0.090	N/S 1:	0.211
Southbound	Through	2.00	3,200	912	0.285 *	N/S 2:	0.321 *
	Left	1.00	1,600	50	0.031	E/W 1:	0.164
	Right	0.00	0	65	0.000	E/W 2:	0.207 *
Westbound	Through	3.00	4,800	537	0.125 *		
	Left	1.00	1,600	89	0.056	V/C Ratio:	0.528
	Right	0.00	0	86	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	778	0.180	ITS:	0.000
	Left	1.00	1,600	58	0.036 *		
	Right	0.00	0	54	0.000	ICU:	0.628
Eastbound	Through	3.00	4,800	465	0.108		
	Left	1.00	1,600	131	0.082 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	47	0.000		N/S 1:	0.117
Southbound	Through	3.00	4,800	448	0.103	*	N/S 2:	0.155 *
	Left	1.00	1,600	42	0.026		E/W 1:	0.151 *
	Right	0.00	0	38	0.000		E/W 2:	0.135
Westbound	Through	3.00	4,800	551	0.123			
	Left	1.00	1,600	42	0.026	*	V/C Ratio:	0.306
	Right	0.00	0	35	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	404	0.091		ITS:	0.000
	Left	1.00	1,600	83	0.052	*		
	Right	0.00	0	47	0.000		ICU:	0.406
Eastbound	Through	3.00	4,800	552	0.125	*		
	Left	1.00	1,600	19	0.012		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.489 *
Southbound	Through	3.00	4,800	852	0.178	N/S 2:	0.178
	Left	1.00	1,600	376	0.235 *	E/W 1:	0.055
	Right	0.00	0	0	0.000	E/W 2:	0.288 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.777
	Right [1]	1.00	1,600	0	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	812	0.254 *	ITS:	0.000
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	88	0.055	ICU:	0.877
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	828	0.288 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.08	1,721	310	0.066		N/S 1:	0.283 *
Southbound	Through	3.92	6,279	1,131	0.180		N/S 2:	0.223
	Left	1.00	1,600	67	0.042	*	E/W 1:	0.227 *
	Right	2.00	3,200	218	0.047		E/W 2:	0.000
Westbound	Through	1.00	1,600	142	0.089	*		
	Left	1.00	1,600	107	0.067		V/C Ratio:	0.510
	Right	0.00	0	214	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,712	0.241	*	ITS:	0.000
	Left	1.00	1,600	68	0.043			
	Right	0.00	1,600	221	0.138	*	ICU:	0.610
Eastbound	Through	2.53	2,444	250	0.102			
	Left	1.47	2,120	241	0.114		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	0%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	174	0.058		N/S 1:	0.426 *
Southbound	Through	2.00	3,200	666	0.208		N/S 2:	0.274
	Left	1.00	1,600	334	0.209	*	E/W 1:	0.135 *
	Right	1.00	1,600	211	0.028		E/W 2:	0.079
Westbound	Through	2.00	3,200	84	0.026			
	Left	1.00	1,600	87	0.054	*	V/C Ratio:	0.561
	Right	1.00	1,600	37	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	694	0.217	*	ITS:	0.000
	Left	1.00	1,600	106	0.066			
	Right	0.00	0	43	0.000		ICU:	0.661
Eastbound	Through	2.00	3,200	217	0.081	*		
	Left	1.00	1,600	81	0.051		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	109	0.000	N/S 1:	0.295 *
Southbound	Through	2.00	3,200	667	0.243	N/S 2:	0.284
	Left	1.00	1,600	158	0.099 *	E/W 1:	0.231
	Right	1.00	1,600	105	0.016	E/W 2:	0.330 *
Westbound	Through	2.00	3,200	883	0.276 *		
	Left	1.00	1,600	136	0.085	V/C Ratio:	0.625
	Right	0.00	0	59	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	568	0.196 *	ITS:	-0.070
	Left	1.00	1,600	65	0.041		
	Right	1.00	1,600	79	0.029	ICU:	0.655
Eastbound	Through	2.00	3,200	466	0.146		
	Left	1.00	1,600	86	0.054 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	96	0.000	N/S 1:	0.411 *
Southbound	Through	2.00	3,200	769	0.270	N/S 2:	0.332
	Left	1.00	1,600	185	0.116 *	E/W 1:	0.390 *
	Right	1.00	1,600	181	0.055	E/W 2:	0.271
Westbound	Through	2.00	3,200	652	0.204		
	Left	1.00	1,600	146	0.091 *	V/C Ratio:	0.801
	Right	0.00	0	100	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	845	0.295 *	ITS:	-0.070
	Left	1.00	1,600	99	0.062		
	Right	1.00	1,600	103	0.033	ICU:	0.831
Eastbound	Through	2.00	3,200	956	0.299 *		
	Left	1.00	1,600	107	0.067	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	142	0.000	N/S 1:	0.219
Southbound	Through	2.00	3,200	644	0.246 *	N/S 2:	0.279 *
	Left	1.00	1,600	91	0.057	E/W 1:	0.257
	Right	0.00	0	77	0.000	E/W 2:	0.341 *
Westbound	Through	2.00	3,200	834	0.285 *		
	Left	1.00	1,600	122	0.076	V/C Ratio:	0.620
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	480	0.162	ITS:	-0.070
	Left	1.00	1,600	53	0.033 *		
	Right	0.00	0	84	0.000	ICU:	0.650
Eastbound	Through	2.00	3,200	495	0.181		
	Left	1.00	1,600	90	0.056 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	119	0.000	N/S 1:	0.331 *
Southbound	Through	2.00	3,200	695	0.254	N/S 2:	0.306
	Left	1.00	1,600	101	0.063 *	E/W 1:	0.501 *
	Right	0.00	0	99	0.000	E/W 2:	0.323
Westbound	Through	2.00	3,200	662	0.238		
	Left	1.00	1,600	89	0.056 *	V/C Ratio:	0.832
	Right	0.00	0	42	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	816	0.268 *	ITS:	-0.070
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	124	0.000	ICU:	0.862
Eastbound	Through	2.00	3,200	1,299	0.445 *		
	Left	1.00	1,600	136	0.085	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	71	0.000	N/S 1:	0.274
Southbound	Through	2.00	3,200	1,219	0.403 *	N/S 2:	0.461 *
	Left	1.00	1,600	66	0.041	E/W 1:	0.268
	Right	0.00	0	111	0.000	E/W 2:	0.332 *
Westbound	Through	2.00	3,200	782	0.279 *		
	Left	1.00	1,600	157	0.098	V/C Ratio:	0.793
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	709	0.233	ITS:	-0.070
	Left	1.00	1,600	92	0.058 *		
	Right	0.00	0	142	0.000	ICU:	0.823
Eastbound	Through	2.00	3,200	402	0.170		
	Left	1.00	1,600	84	0.053 *	LOS:	D

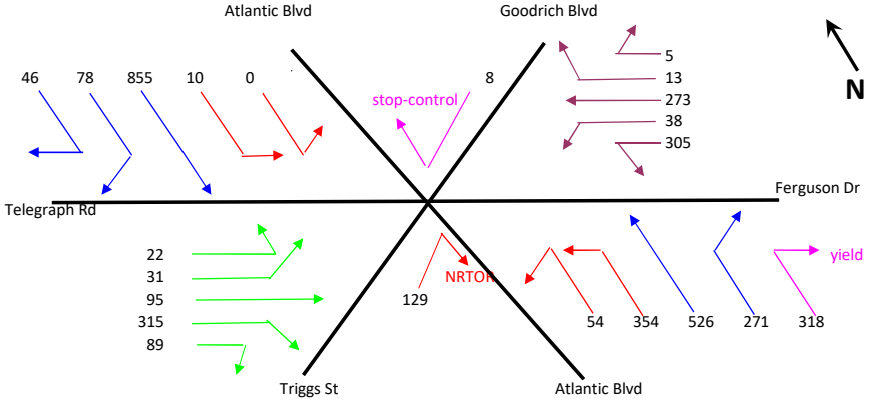
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	30	0.000	N/S 1:	0.432 *
Southbound	Through	2.00	3,200	1,162	0.373	N/S 2:	0.424
	Left	1.00	1,600	62	0.039 *	E/W 1:	0.458 *
	Right	0.00	0	70	0.000	E/W 2:	0.272
Westbound	Through	2.00	3,200	466	0.168		
	Left	1.00	1,600	67	0.042 *	V/C Ratio:	0.890
	Right	0.00	0	79	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,179	0.393 *	ITS:	-0.070
	Left	1.00	1,600	81	0.051		
	Right	0.00	0	213	0.000	ICU:	0.920
Eastbound	Through	2.00	3,200	1,117	0.416 *		
	Left	1.00	1,600	166	0.104	LOS:	E

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project with Full Mitigation Conditions - AM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{54 + 354}{2} = 204$ or

Southbound Left: $\frac{10 + 0}{1} = 10$ or

Northbound Right: 129

Critical Volume #1 (CV1): **204**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{526 + 271}{3} = 266$ or

Southbound Through + Right $\frac{855 + 78 + 46}{3} = 326$

Critical Volume #2 (CV2): **326**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{305 + 38}{1} = 343$ or

Westbound Through + Right: $\frac{273 + 13 + 5}{2} = 146$ or

Westbound Right: 13 + 5 = 18

Critical Volume #3 (CV3): **343**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{22 + 31 + 95}{1} = 148$ or

Eastbound Through: $\frac{315}{3} = 105$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **148**

Critical Volume: 204 + 326 + 343 + 148 = **1,021**

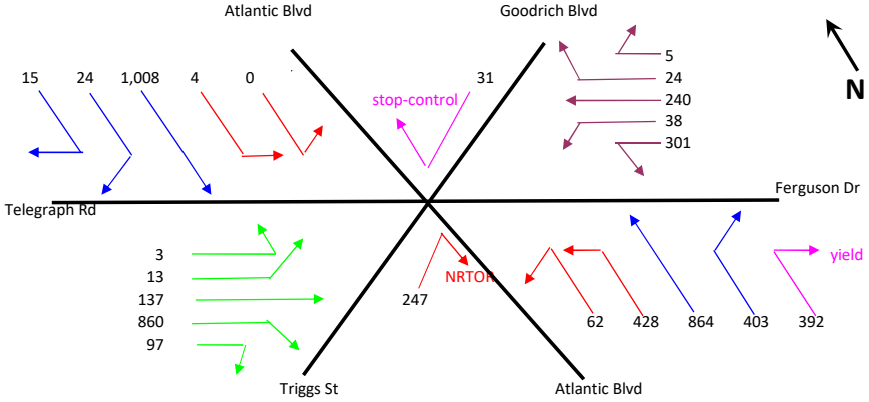
Intersection V/C: $\frac{1,021}{1,375} =$ **0.743**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.673** **Intersection LOS:** **B**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project with Full Mitigation Conditions - PM Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{62 + 428}{2} = 245$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 247

Critical Volume #1 (CV1): **247**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{864 + 403}{3} = 422$ or

Southbound Through + Right $\frac{1,008 + 24 + 15}{3} = 349$

Critical Volume #2 (CV2): **422**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{301 + 38}{1} = 339$ or

Westbound Through + Right: $\frac{240 + 24 + 5}{2} = 135$ or

Westbound Right: 24 + 5 = 29

Critical Volume #3 (CV3): **339**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 13 + 137}{1} = 153$ or

Eastbound Through: $\frac{860}{3} = 286.7$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **287**

Critical Volume: 247 + 422 + 339 + 287 = **1,295**

Intersection V/C: $\frac{1,295}{1,375} =$ **0.942**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.872** **Intersection LOS:** **D**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	238	0.000	N/S 1:	0.362
Southbound	Through	2.00	3,200	1,203	0.450 *	N/S 2:	0.469 *
	Left	1.00	1,600	200	0.125	E/W 1:	0.090
	Right	0.00	1,600	231	0.144 *	E/W 2:	0.182 *
Westbound	Through	2.00	1,600	116	0.109		
	Left	0.00	1,600	59	0.037	V/C Ratio:	0.651
	Right	0.00	0	69	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	688	0.237	ITS:	-0.070
	Left	1.00	1,600	31	0.019 *		
	Right	0.00	0	8	0.000	ICU:	0.681
Eastbound	Through	2.00	1,600	16	0.053		
	Left	0.00	1,600	60	0.038 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	198	0.000	N/S 1:	0.471 *
Southbound	Through	2.00	3,200	1,273	0.460	N/S 2:	0.465
	Left	1.00	1,600	144	0.090 *	E/W 1:	0.317 *
	Right	0.00	1,600	154	0.096	E/W 2:	0.262
Westbound	Through	2.00	1,600	27	0.048		
	Left	0.00	1,600	49	0.031 *	V/C Ratio:	0.788
	Right	0.00	0	39	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,180	0.381 *	ITS:	-0.070
	Left	1.00	1,600	8	0.005		
	Right	0.00	0	27	0.000	ICU:	0.818
Eastbound	Through	2.00	1,600	165	0.286 *		
	Left	0.00	1,600	266	0.166	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.206
Southbound	Through	3.00	4,800	1,349	0.284 *	N/S 2:	0.333 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.021 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.354
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	991	0.206	ITS:	-0.070
	Left	1.00	1,600	79	0.049 *		
	Right	0.00	0	34	0.000	ICU:	0.384
Eastbound	Through	1.00	1,600	0	0.021 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.278 *
Southbound	Through	3.00	4,800	1,215	0.254	N/S 2:	0.266
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.044 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.322
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,334	0.278 *	ITS:	-0.070
	Left	1.00	1,600	19	0.012		
	Right	0.00	0	70	0.000	ICU:	0.352
Eastbound	Through	1.00	1,600	0	0.044 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	286	0.059	N/S 1:	0.277 *
Southbound	Through	2.00	3,200	762	0.238	N/S 2:	0.263
	Left	1.00	1,600	189	0.118 *	E/W 1:	0.158
	Right	0.00	0	160	0.000	E/W 2:	0.378 *
Westbound	Through	3.00	4,800	1,077	0.258 *		
	Left	1.00	1,600	51	0.032	V/C Ratio:	0.655
	Right	0.00	0	15	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	493	0.159 *	ITS:	-0.070
	Left	1.00	1,600	40	0.025		
	Right	0.00	0	33	0.000	ICU:	0.685
Eastbound	Through	3.00	4,800	570	0.126		
	Left	1.00	1,600	192	0.120 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	293	0.040	N/S 1:	0.451 *
Southbound	Through	2.00	3,200	745	0.233	N/S 2:	0.249
	Left	1.00	1,600	301	0.188 *	E/W 1:	0.251
	Right	0.00	0	190	0.000	E/W 2:	0.333 *
Westbound	Through	3.00	4,800	720	0.190 *		
	Left	1.00	1,600	46	0.029	V/C Ratio:	0.784
	Right	0.00	0	59	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	781	0.263 *	ITS:	-0.070
	Left	1.00	1,600	26	0.016		
	Right	0.00	0	36	0.000	ICU:	0.814
Eastbound	Through	3.00	4,800	1,028	0.222		
	Left	1.00	1,600	229	0.143 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.295 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.255 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	450	0.141 *		
	Left	1.00	1,600	226	0.141	V/C Ratio:	0.550
	Right	1.46	2,341	621	0.195	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.54	3,653	1,077	0.295 *		
	Right	3.00	4,800	1,201	0.000	ICU:	0.580
Eastbound	Through	2.00	3,200	366	0.114 *		
	Left	0.00	0	0	0.000	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.340 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.543 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	854	0.267		
	Left	1.00	1,600	556	0.348 *	V/C Ratio:	0.883
	Right	1.37	2,197	672	0.132	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.63	3,783	1,286	0.340 *		
	Right	3.00	4,800	1,848	0.045	ICU:	0.913
Eastbound	Through	2.00	3,200	624	0.195 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	67	0.000	N/S 1:	0.131 *
Southbound	Through	1.00	1,600	63	0.044 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.229
	Right	0.00	0	8	0.000	E/W 2:	0.314 *
Westbound	Through	2.00	3,200	401	0.128 *		
	Left	2.00	2,880	264	0.092	V/C Ratio:	0.445
	Right	0.00	1,600	21	0.013	Loss Time:	0.100
Northbound	Through	2.00	1,600	15	0.009	ITS:	-0.070
	Left	1.71	2,467	215	0.087 *		
	Right	0.00	0	60	0.000	ICU:	0.475
Eastbound	Through	3.00	4,800	598	0.137		
	Left	1.00	1,600	297	0.186 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	331	0.139	N/S 1:	0.268 *
Southbound	Through	1.00	1,600	256	0.173 *	N/S 2:	0.000
	Left	0.00	1,600	21	0.013	E/W 1:	0.378
	Right	0.00	0	7	0.000	E/W 2:	0.395 *
Westbound	Through	2.00	3,200	823	0.259 *		
	Left	2.00	2,880	424	0.147	V/C Ratio:	0.663
	Right	0.00	1,600	44	0.028	Loss Time:	0.100
Northbound	Through	2.00	1,600	10	0.006	ITS:	-0.070
	Left	1.60	2,310	219	0.095 *		
	Right	0.00	0	101	0.000	ICU:	0.693
Eastbound	Through	3.00	4,800	1,006	0.231		
	Left	1.00	1,600	217	0.136 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.96	3,143	74	0.000	N/S 1:	0.026 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.04	1,491	39	0.026 *	E/W 1:	0.113
	Right	1.00	1,600	83	0.026	E/W 2:	0.219 *
Westbound	Through	3.00	4,800	730	0.152 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.245
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.275
Eastbound	Through	2.00	3,200	362	0.113		
	Left	2.00	2,880	193	0.067 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	449	0.067	N/S 1:	0.136 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.067
	Left	1.00	1,600	218	0.136 *	E/W 1:	0.201
	Right	1.00	1,600	237	0.012	E/W 2:	0.297 *
Westbound	Through	3.00	4,800	713	0.149 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.433
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.463
Eastbound	Through	2.00	3,200	644	0.201		
	Left	2.00	2,880	425	0.148 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	26	0.000	N/S 1:	0.021 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	33	0.021 *	E/W 1:	0.067
	Right	0.00	0	109	0.000	E/W 2:	0.232 *
Westbound	Through	3.00	4,800	789	0.187 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.253
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.283
Eastbound	Through	3.00	4,800	320	0.067		
	Left	1.00	1,600	72	0.045 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	157	0.073	N/S 1:	0.145 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.073
	Left	1.00	1,600	232	0.145 *	E/W 1:	0.166
	Right	0.00	0	111	0.000	E/W 2:	0.237 *
Westbound	Through	3.00	4,800	780	0.186 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.382
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.412
Eastbound	Through	3.00	4,800	795	0.166		
	Left	1.00	1,600	82	0.051 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.49	786	43	0.036	N/S 1:	0.061 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.036
	Left	1.51	2,172	132	0.061 *	E/W 1:	0.058
	Right	0.00	0	188	0.000	E/W 2:	0.250 *
Westbound	Through	3.00	4,800	827	0.212 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.311
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.341
Eastbound	Through	3.00	4,800	268	0.056		
	Left	1.00	1,600	61	0.038 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.45	719	89	0.093	N/S 1:	0.138 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.093
	Left	1.55	2,233	307	0.138 *	E/W 1:	0.193
	Right	0.00	0	148	0.000	E/W 2:	0.247 *
Westbound	Through	3.00	4,800	745	0.186 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.385
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.415
Eastbound	Through	3.00	4,800	927	0.193		
	Left	1.00	1,600	98	0.061 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	11	0.000		N/S 1:	0.140	*
Southbound	Through	1.00	1,600	14	0.016	*	N/S 2:	0.000	
	Left	1.00	1,600	17	0.011		E/W 1:	0.258	*
	Right	0.00	0	9	0.000		E/W 2:	0.171	
Westbound	Through	3.00	4,800	814	0.171				
	Left	2.00	2,880	505	0.175	*	V/C Ratio:	0.398	
	Right	1.00	1,600	304	0.015		Loss Time:	0.100	
Northbound	Through	1.00	1,600	5	0.124	*	ITS:	-0.070	
	Left	0.00	1,600	193	0.121				
	Right	0.00	0	35	0.000		ICU:	0.428	
Eastbound	Through	3.00	4,800	361	0.083	*			
	Left	1.00	1,600	0	0.000		LOS:	A	

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	17	0.000		N/S 1:	0.178	*
Southbound	Through	1.00	1,600	74	0.057	*	N/S 2:	0.000	
	Left	1.00	1,600	32	0.020		E/W 1:	0.443	*
	Right	0.00	0	52	0.000		E/W 2:	0.174	
Westbound	Through	3.00	4,800	684	0.153				
	Left	2.00	2,880	605	0.210	*	V/C Ratio:	0.621	
	Right	1.00	1,600	215	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	12	0.121	*	ITS:	-0.070	
	Left	0.00	1,600	181	0.113				
	Right	0.00	0	62	0.000		ICU:	0.651	
Eastbound	Through	3.00	4,800	1,055	0.233	*			
	Left	1.00	1,600	34	0.021		LOS:	B	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	532	0.244		N/S 1:	0.396 *
Southbound	Through	2.00	3,200	720	0.225		N/S 2:	0.293
	Left	1.00	1,600	33	0.021	*	E/W 1:	0.193
	Right	0.00	0	54	0.000		E/W 2:	0.286 *
Westbound	Through	2.00	3,200	580	0.198	*		
	Left	1.00	1,600	248	0.155		V/C Ratio:	0.682
	Right	0.00	0	148	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,053	0.375	*	ITS:	-0.070
	Left	2.00	2,880	142	0.049			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.712
Eastbound	Through	2.00	3,200	123	0.038			
	Left	2.00	2,880	254	0.088	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	577	0.217		N/S 1:	0.449 *
Southbound	Through	2.00	3,200	642	0.201		N/S 2:	0.280
	Left	1.00	1,600	70	0.044	*	E/W 1:	0.283
	Right	0.00	0	48	0.000		E/W 2:	0.317 *
Westbound	Through	2.00	3,200	505	0.173	*		
	Left	1.00	1,600	196	0.123		V/C Ratio:	0.766
	Right	0.00	0	249	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,048	0.405	*	ITS:	-0.070
	Left	2.00	2,880	181	0.063			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.796
Eastbound	Through	2.00	3,200	511	0.160			
	Left	2.00	2,880	414	0.144	*	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	70	0.037	N/S 1:	0.355
Southbound	Through	2.00	3,200	1,159	0.362 *	N/S 2:	0.366 *
	Left	1.00	1,600	75	0.047	E/W 1:	0.279 *
	Right	1.00	1,600	212	0.109	E/W 2:	0.221
Westbound	Through	2.00	3,200	662	0.207		
	Left	2.00	2,880	593	0.206 *	V/C Ratio:	0.645
	Right	1.00	1,600	431	0.063	Loss Time:	0.100
Northbound	Through	2.00	3,200	978	0.308	ITS:	-0.070
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	117	0.073 *	ICU:	0.675
Eastbound	Through	2.00	3,200	165	0.052		
	Left	1.00	1,600	23	0.014	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	61	0.027	N/S 1:	0.319 *
Southbound	Through	2.00	3,200	1,003	0.313	N/S 2:	0.315
	Left	1.00	1,600	104	0.065 *	E/W 1:	0.315 *
	Right	1.00	1,600	335	0.177	E/W 2:	0.199
Westbound	Through	2.00	3,200	344	0.108		
	Left	2.00	2,880	316	0.110 *	V/C Ratio:	0.634
	Right	1.00	1,600	405	0.143	Loss Time:	0.100
Northbound	Through	2.00	3,200	811	0.254 *	ITS:	-0.070
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	262	0.164	ICU:	0.664
Eastbound	Through	2.00	3,200	655	0.205 *		
	Left	1.00	1,600	35	0.022	LOS:	B

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.044
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.223 *
	Left	0.00	0	0	0.000	E/W 1:	0.515 *
	Right	0.00	0	0	0.000	E/W 2:	0.290
Westbound	Through	2.00	3,200	928	0.290		
	Left	1.00	1,600	500	0.313 *	V/C Ratio:	0.738
	Right	0.03	45	9	0.044	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.97	2,840	632	0.223 *		
	Right	0.00	0	161	0.000	ICU:	0.768
Eastbound	Through	2.00	3,200	484	0.202 *		
	Left	0.00	0	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.019
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.172 *
	Left	0.00	0	0	0.000	E/W 1:	0.622 *
	Right	0.00	0	0	0.000	E/W 2:	0.170
Westbound	Through	2.00	3,200	545	0.170		
	Left	1.00	1,600	434	0.271 *	V/C Ratio:	0.794
	Right	0.11	181	28	0.019	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.89	2,717	468	0.172 *		
	Right	0.00	0	241	0.000	ICU:	0.824
Eastbound	Through	2.00	3,200	881	0.351 *		
	Left	0.00	0	0	0.000	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.360
Southbound	Through	1.00	1,600	833	0.521 *	N/S 2:	0.521 *
	Left	2.00	2,880	621	0.216	E/W 1:	0.000
	Right	3.00	4,800	1,017	0.104 *	E/W 2:	0.104 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.625
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	693	0.144	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.655
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.554
Southbound	Through	1.00	1,600	1,413	0.883 *	N/S 2:	0.883 *
	Left	2.00	2,880	1,032	0.358	E/W 1:	0.000
	Right	3.00	4,800	983	0.026 *	E/W 2:	0.026 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.909
	Right	0.00	0	5	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	935	0.196	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.939
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	11	0.000	N/S 1:	0.185 *
Southbound	Through	2.00	3,200	422	0.135	N/S 2:	0.136
	Left	2.00	2,880	189	0.066 *	E/W 1:	0.175 *
	Right	1.96	3,142	490	0.123	E/W 2:	0.000
Westbound	Through	0.04	58	9	0.156 *		
	Left	1.00	1,600	246	0.154	V/C Ratio:	0.360
	Right	0.00	0	34	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	535	0.119 *	ITS:	-0.070
	Left	1.00	1,600	1	0.001		
	Right	0.00	0	0	0.000	ICU:	0.390
Eastbound	Through	2.00	3,200	57	0.019 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.244 *
Southbound	Through	2.00	3,200	758	0.243 *	N/S 2:	0.244
	Left	2.00	2,880	269	0.093 *	E/W 1:	0.114 *
	Right	1.91	3,064	292	0.049	E/W 2:	0.000
Westbound	Through	0.09	136	13	0.095 *		
	Left	1.00	1,600	98	0.061	V/C Ratio:	0.358
	Right	0.00	0	35	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	691	0.151 *	ITS:	-0.070
	Left	1.00	1,600	1	0.001 *		
	Right	0.00	0	14	0.000	ICU:	0.388
Eastbound	Through	2.00	3,200	29	0.019 *		
	Left	0.00	1,600	17	0.011	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	145	0.067	N/S 1:	0.128
Southbound	Through	2.00	3,200	594	0.186 *	N/S 2:	0.215 *
	Left	1.00	1,600	13	0.008	E/W 1:	0.140
	Right	0.00	0	22	0.000	E/W 2:	0.162 *
Westbound	Through	3.00	4,800	523	0.114 *		
	Left	1.00	1,600	38	0.024	V/C Ratio:	0.377
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	546	0.120	ITS:	-0.070
	Left	1.00	1,600	47	0.029 *		
	Right	0.00	0	72	0.000	ICU:	0.407
Eastbound	Through	3.00	4,800	484	0.116		
	Left	1.00	1,600	77	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	172	0.082	N/S 1:	0.158
Southbound	Through	2.00	3,200	1,025	0.320 *	N/S 2:	0.376 *
	Left	1.00	1,600	10	0.006	E/W 1:	0.167
	Right	0.00	0	40	0.000	E/W 2:	0.233 *
Westbound	Through	3.00	4,800	834	0.182 *		
	Left	1.00	1,600	54	0.034	V/C Ratio:	0.609
	Right	0.00	0	21	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	710	0.152	ITS:	-0.070
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	58	0.000	ICU:	0.639
Eastbound	Through	3.00	4,800	580	0.133		
	Left	1.00	1,600	82	0.051 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	22	0.000	N/S 1:	0.116
Southbound	Through	3.00	4,800	491	0.107 *	N/S 2:	0.150 *
	Left	1.00	1,600	39	0.024	E/W 1:	0.108
	Right	0.00	0	21	0.000	E/W 2:	0.137 *
Westbound	Through	3.00	4,800	581	0.125 *		
	Left	1.00	1,600	36	0.023	V/C Ratio:	0.287
	Right	0.00	0	17	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	426	0.092	ITS:	-0.070
	Left	1.00	1,600	68	0.043 *		
	Right	0.00	0	71	0.000	ICU:	0.317
Eastbound	Through	3.00	4,800	336	0.085		
	Left	1.00	1,600	19	0.012 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	31	0.000	N/S 1:	0.174
Southbound	Through	3.00	4,800	597	0.131 *	N/S 2:	0.187 *
	Left	1.00	1,600	55	0.034	E/W 1:	0.176 *
	Right	0.00	0	32	0.000	E/W 2:	0.169
Westbound	Through	3.00	4,800	670	0.146		
	Left	1.00	1,600	29	0.018 *	V/C Ratio:	0.363
	Right	0.00	0	27	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	645	0.140	ITS:	-0.070
	Left	1.00	1,600	89	0.056 *		
	Right	0.00	0	78	0.000	ICU:	0.393
Eastbound	Through	3.00	4,800	679	0.158 *		
	Left	1.00	1,600	36	0.023	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.262 *
Southbound	Through	3.00	4,800	1,157	0.241	N/S 2:	0.241
	Left	1.00	1,600	106	0.066 *	E/W 1:	0.068
	Right	0.00	0	0	0.000	E/W 2:	0.240 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.502
	Right	1.00	1,600	122	0.076	Loss Time:	0.100
Northbound	Through	2.00	3,200	628	0.196 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	108	0.068	ICU:	0.532
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	690	0.240 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.562 *
Southbound	Through	3.00	4,800	991	0.206	N/S 2:	0.206
	Left	1.00	1,600	286	0.179 *	E/W 1:	0.017
	Right	0.00	0	0	0.000	E/W 2:	0.087 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.649
	Right	1.00	1,600	311	0.194	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,227	0.383 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	27	0.017	ICU:	0.679
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	251	0.087 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	794	0.131	N/S 1:	0.238 *
Southbound	Through	3.00	4,800	663	0.138	N/S 2:	0.190
	Left	1.00	1,600	56	0.035 *	E/W 1:	0.316 *
	Right	2.00	3,200	250	0.061	E/W 2:	0.000
Westbound	Through	1.00	1,600	260	0.163 *		
	Left	1.00	1,600	146	0.091	V/C Ratio:	0.554
	Right	0.00	0	306	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,319	0.203 *	ITS:	-0.070
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	122	0.000	ICU:	0.584
Eastbound	Through	3.00	4,800	612	0.153 *		
	Left	1.00	1,600	187	0.117	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	307	0.000	N/S 1:	0.206
Southbound	Through	4.00	6,400	1,235	0.193 *	N/S 2:	0.221 *
	Left	1.00	1,600	33	0.021	E/W 1:	0.449 *
	Right	2.00	3,200	475	0.138	E/W 2:	0.000
Westbound	Through	1.00	1,600	174	0.109		
	Left	1.00	1,600	292	0.183 *	V/C Ratio:	0.670
	Right	0.00	0	221	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,262	0.185	ITS:	-0.070
	Left	1.00	1,600	45	0.028 *		
	Right	0.00	1,600	425	0.266 *	ICU:	0.700
Eastbound	Through	2.56	2,496	534	0.214		
	Left	1.44	2,074	493	0.238	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	738	0.364	N/S 1:	0.478 *
Southbound	Through	2.00	3,200	831	0.260	N/S 2:	0.411
	Left	1.00	1,600	288	0.180 *	E/W 1:	0.188
	Right	1.00	1,600	364	0.138 *	E/W 2:	0.236 *
Westbound	Through	2.00	3,200	185	0.058		
	Left	1.00	1,600	181	0.113	V/C Ratio:	0.714
	Right	1.00	1,600	98	0.005	Loss Time:	0.100
Northbound	Through	2.00	3,200	952	0.298 *	ITS:	-0.070
	Left	1.00	1,600	75	0.047		
	Right	0.00	0	29	0.000	ICU:	0.744
Eastbound	Through	2.00	3,200	210	0.075		
	Left	1.00	1,600	156	0.098 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	297	0.046	N/S 1:	0.449 *
Southbound	Through	2.00	3,200	1,084	0.339	N/S 2:	0.366
	Left	1.00	1,600	284	0.178 *	E/W 1:	0.330 *
	Right	1.00	1,600	150	0.005	E/W 2:	0.152
Westbound	Through	2.00	3,200	43	0.013		
	Left	1.00	1,600	56	0.035 *	V/C Ratio:	0.779
	Right	1.00	1,600	180	0.095	Loss Time:	0.100
Northbound	Through	2.00	3,200	868	0.271 *	ITS:	-0.070
	Left	1.00	1,600	43	0.027		
	Right	0.00	0	98	0.000	ICU:	0.809
Eastbound	Through	2.00	3,200	845	0.295 *		
	Left	1.00	1,600	223	0.139	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	164	0.000		N/S 1:	0.386 *
Southbound	Through	2.00	3,200	708	0.273		N/S 2:	0.354
	Left	1.00	1,600	289	0.181	*	E/W 1:	0.333 *
	Right	1.00	1,600	226	0.051		E/W 2:	0.314
Westbound	Through	2.00	3,200	721	0.225			
	Left	1.00	1,600	164	0.103	*	V/C Ratio:	0.719
	Right	0.00	0	123	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	532	0.205	*	ITS:	-0.070
	Left	1.00	1,600	129	0.081			
	Right	1.00	1,600	116	0.032		ICU:	0.749
Eastbound	Through	2.00	3,200	736	0.230	*		
	Left	1.00	1,600	142	0.089		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	184	0.000		N/S 1:	0.241
Southbound	Through	2.00	3,200	870	0.329	*	N/S 2:	0.384 *
	Left	1.00	1,600	107	0.067		E/W 1:	0.344 *
	Right	0.00	0	86	0.000		E/W 2:	0.327
Westbound	Through	2.00	3,200	646	0.229			
	Left	1.00	1,600	131	0.082	*	V/C Ratio:	0.728
	Right	0.00	0	56	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	502	0.174		ITS:	-0.070
	Left	1.00	1,600	88	0.055	*		
	Right	0.00	0	140	0.000		ICU:	0.758
Eastbound	Through	2.00	3,200	699	0.262	*		
	Left	1.00	1,600	157	0.098		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

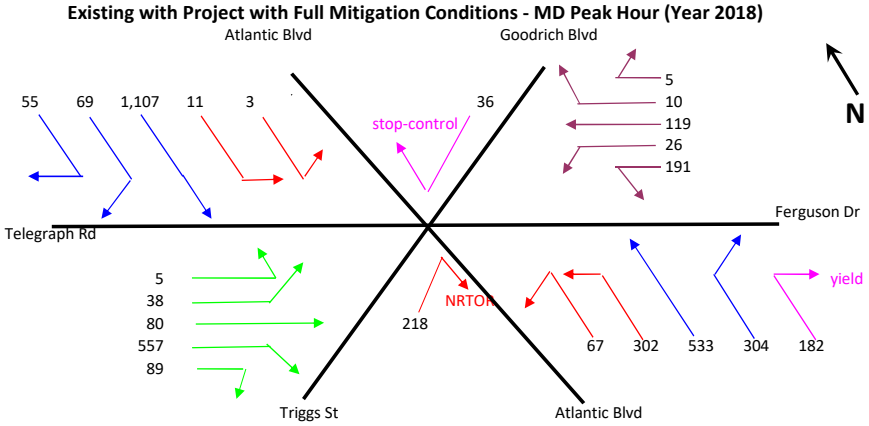
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	55	0.000		N/S 1:	0.300
Southbound	Through	2.00	3,200	795	0.266	*	N/S 2:	0.364 *
	Left	1.00	1,600	62	0.039		E/W 1:	0.253 *
	Right	0.00	0	98	0.000		E/W 2:	0.194
Westbound	Through	2.00	3,200	351	0.140			
	Left	1.00	1,600	88	0.055	*	V/C Ratio:	0.617
	Right	0.00	0	72	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	763	0.261		ITS:	-0.070
	Left	1.00	1,600	156	0.098	*		
	Right	0.00	0	167	0.000		ICU:	0.647
Eastbound	Through	2.00	3,200	467	0.198	*		
	Left	1.00	1,600	87	0.054		LOS:	B

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Existing with Project with Full Mitigation Conditions - MD Peak Hour (Year 2018)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{67 + 302}{2} = 185$ or

Southbound Left: $\frac{11 + 3}{1} = 14$ or

Northbound Right: 218

Critical Volume #1 (CV1): **218**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{533 + 304}{3} = 279$ or

Southbound Through + Right $\frac{1,107 + 69 + 55}{3} = 410$

Critical Volume #2 (CV2): **410**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{191 + 26}{1} = 217$ or

Westbound Through + Right: $\frac{119 + 10 + 5}{2} = 67$ or

Westbound Right: 10 + 5 = 15

Critical Volume #3 (CV3): **217**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 38 + 80}{1} = 123$ or

Eastbound Through: $\frac{557}{3} = 185.7$ or

Eastbound Right: 89

Critical Volume #4 (CV4): **186**

Critical Volume: 218 + 410 + 217 + 186 = **1,031**

Intersection V/C: $\frac{1,031}{1,375} = \mathbf{0.75}$

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.680** **Intersection LOS:** **B**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	135	0.000		N/S 1:	0.321 *
Southbound	Through	2.00	3,200	872	0.315	*	N/S 2:	0.321
	Left	1.00	1,600	75	0.047	*	E/W 1:	0.091
	Right	0.00	1,600	94	0.059	*	E/W 2:	0.121 *
Westbound	Through	2.00	1,600	13	0.019			
	Left	0.00	1,600	17	0.011		V/C Ratio:	0.442
	Right	0.00	0	6	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	872	0.274	*	ITS:	-0.070
	Left	1.00	1,600	9	0.006	*		
	Right	0.00	0	18	0.000		ICU:	0.472
Eastbound	Through	2.00	1,600	11	0.080			
	Left	0.00	1,600	99	0.062	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.196
Southbound	Through	3.00	4,800	953	0.199 *	N/S 2:	0.208 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.012 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.220
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	941	0.196	ITS:	-0.070
	Left	1.00	1,600	15	0.009 *		
	Right	0.00	0	19	0.000	ICU:	0.250
Eastbound	Through	1.00	1,600	0	0.012 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	237	0.018		N/S 1:	0.291 *
Southbound	Through	2.00	3,200	474	0.148		N/S 2:	0.158
	Left	1.00	1,600	210	0.131	*	E/W 1:	0.171
	Right	0.00	0	192	0.000		E/W 2:	0.310 *
Westbound	Through	3.00	4,800	672	0.180	*		
	Left	1.00	1,600	39	0.024		V/C Ratio:	0.601
	Right	0.00	0	36	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	475	0.160	*	ITS:	-0.070
	Left	1.00	1,600	16	0.010			
	Right	0.00	0	23	0.000		ICU:	0.631
Eastbound	Through	3.00	4,800	681	0.147			
	Left	1.00	1,600	208	0.130	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.273 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.497 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	606	0.189		
	Left	1.00	1,600	428	0.268 *	V/C Ratio:	0.770
	Right	2.00	3,200	1,090	0.207	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.00	2,880	785	0.273 *		
	Right	3.00	4,800	1,387	0.016	ICU:	0.800
Eastbound	Through	2.00	3,200	732	0.229 *		
	Left	0.00	0	0	0.000	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	219	0.035	N/S 1:	0.211 *
Southbound	Through	1.00	1,600	163	0.119 *	N/S 2:	0.000
	Left	0.00	1,600	27	0.017	E/W 1:	0.469 *
	Right	0.00	0	12	0.000	E/W 2:	0.421
Westbound	Through	2.00	3,200	682	0.217		
	Left	2.00	2,880	453	0.157 *	V/C Ratio:	0.680
	Right	0.00	1,600	110	0.069	Loss Time:	0.100
Northbound	Through	2.00	1,600	8	0.005	ITS:	-0.070
	Left	1.11	1,602	148	0.092 *		
	Right	0.00	0	57	0.000	ICU:	0.710
Eastbound	Through	3.00	4,800	1,441	0.312 *		
	Left	1.00	1,600	327	0.204	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.80	2,883	409	0.003		N/S 1:	0.158 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.003
	Left	1.20	1,725	272	0.158	*	E/W 1:	0.198
	Right	1.00	1,600	468	0.135		E/W 2:	0.452 *
Westbound	Through	3.00	4,800	839	0.175	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.610
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.640
Eastbound	Through	2.00	3,200	634	0.198			
	Left	2.00	2,880	799	0.277	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	306	0.146	N/S 1:	0.177 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.146
	Left	1.00	1,600	283	0.177 *	E/W 1:	0.156
	Right	0.00	0	204	0.000	E/W 2:	0.338 *
Westbound	Through	3.00	4,800	987	0.248 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.515
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.545
Eastbound	Through	3.00	4,800	747	0.156		
	Left	1.00	1,600	144	0.090 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.55	882	83	0.066	N/S 1:	0.105 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.066
	Left	1.45	2,086	218	0.105 *	E/W 1:	0.180
	Right	0.00	0	178	0.000	E/W 2:	0.323 *
Westbound	Through	3.00	4,800	1,102	0.267 *		
	Left	0.00	1,600	1	0.001	V/C Ratio:	0.428
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.458
Eastbound	Through	3.00	4,800	860	0.179		
	Left	1.00	1,600	89	0.056 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	16	0.000		N/S 1:	0.282	*
Southbound	Through	1.00	1,600	35	0.032	*	N/S 2:	0.000	
	Left	1.00	1,600	30	0.019		E/W 1:	0.399	*
	Right	0.00	0	53	0.000		E/W 2:	0.229	
Westbound	Through	3.00	4,800	944	0.208				
	Left	2.00	2,880	500	0.174	*	V/C Ratio:	0.681	
	Right	1.00	1,600	214	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	31	0.250	*	ITS:	-0.070	
	Left	0.00	1,600	369	0.231				
	Right	0.00	0	76	0.000		ICU:	0.711	
Eastbound	Through	3.00	4,800	1,005	0.225	*			
	Left	1.00	1,600	34	0.021		LOS:	C	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	560	0.203 *	N/S 1:	0.343
Southbound	Through	2.00	3,200	424	0.133	N/S 2:	0.359 *
	Left	1.00	1,600	67	0.042	E/W 1:	0.213
	Right	0.00	0	48	0.000	E/W 2:	0.338 *
Westbound	Through	2.00	3,200	563	0.191 *		
	Left	1.00	1,600	158	0.099	V/C Ratio:	0.697
	Right	0.00	0	167	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	795	0.301	ITS:	-0.070
	Left	2.00	2,880	450	0.156 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.727
Eastbound	Through	2.00	3,200	364	0.114		
	Left	2.00	2,880	422	0.147 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	134	0.084		N/S 1:	0.157
Southbound	Through	2.00	3,200	564	0.176	*	N/S 2:	0.237 *
	Left	1.00	1,600	31	0.019		E/W 1:	0.214 *
	Right	1.00	1,600	330	0.206	*	E/W 2:	0.214
Westbound	Through	2.00	3,200	500	0.156			
	Left	2.00	2,880	269	0.093	*	V/C Ratio:	0.451
	Right	1.00	1,600	296	0.092		Loss Time:	0.100
Northbound	Through	2.00	3,200	441	0.138		ITS:	-0.070
	Left	1.00	1,600	98	0.061	*		
	Right [1]	1.00	1,600	193	0.121	*	ICU:	0.481
Eastbound	Through	2.00	3,200	334	0.104			
	Left	1.00	1,600	13	0.008	*	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.059
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.154 *
	Left	0.00	0	0	0.000	E/W 1:	0.382 *
	Right	0.00	0	0	0.000	E/W 2:	0.175
Westbound	Through	2.00	3,200	559	0.175		
	Left	1.00	1,600	255	0.159 *	V/C Ratio:	0.536
	Right	0.09	137	19	0.059	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.91	2,756	424	0.154 *		
	Right	0.00	0	177	0.000	ICU:	0.566
Eastbound	Through	2.00	3,200	538	0.223 *		
	Left	0.00	0	0	0.000	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.420
Southbound	Through	1.00	1,600	1,044	0.653 *	N/S 2:	0.653 *
	Left	2.00	2,880	706	0.245	E/W 1:	0.000
	Right	3.00	4,800	1,013	0.088 *	E/W 2:	0.088 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.741
	Right	0.00	0	6	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	834	0.175	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.771
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	23	0.000		N/S 1:	0.184 *
Southbound	Through	2.00	3,200	456	0.150		N/S 2:	0.151
	Left	2.00	2,880	271	0.094	*	E/W 1:	0.204 *
	Right	1.98	3,163	594	0.141		E/W 2:	0.000
Westbound	Through	0.02	37	7	0.188	*		
	Left	1.00	1,600	41	0.026		V/C Ratio:	0.388
	Right	0.00	0	36	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	397	0.090	*	ITS:	-0.070
	Left	1.00	1,600	1	0.001			
	Right	0.00	0	5	0.000		ICU:	0.418
Eastbound	Through	2.00	3,200	40	0.016	*		
	Left	0.00	1,600	7	0.004		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	188	0.081		N/S 1:	0.143
Southbound	Through	2.00	3,200	690	0.216	*	N/S 2:	0.249 *
	Left	1.00	1,600	21	0.013		E/W 1:	0.120
	Right	0.00	0	34	0.000		E/W 2:	0.176 *
Westbound	Through	3.00	4,800	455	0.102	*		
	Left	1.00	1,600	45	0.028		V/C Ratio:	0.425
	Right	0.00	0	45	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	581	0.130		ITS:	-0.070
	Left	1.00	1,600	52	0.033	*		
	Right	0.00	0	49	0.000		ICU:	0.455
Eastbound	Through	3.00	4,800	392	0.092			
	Left	1.00	1,600	118	0.074	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	40	0.000		N/S 1:	0.096
Southbound	Through	3.00	4,800	365	0.084	*	N/S 2:	0.117 *
	Left	1.00	1,600	35	0.022		E/W 1:	0.116 *
	Right	0.00	0	31	0.000		E/W 2:	0.104
Westbound	Through	3.00	4,800	426	0.095			
	Left	1.00	1,600	35	0.022	*	V/C Ratio:	0.233
	Right	0.00	0	28	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	327	0.074		ITS:	-0.070
	Left	1.00	1,600	52	0.033	*		
	Right	0.00	0	21	0.000		ICU:	0.263
Eastbound	Through	3.00	4,800	428	0.094	*		
	Left	1.00	1,600	14	0.009		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.411 *
Southbound	Through	3.00	4,800	683	0.142	N/S 2:	0.142
	Left	1.00	1,600	332	0.208 *	E/W 1:	0.050
	Right	0.00	0	0	0.000	E/W 2:	0.251 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.662
	Right	1.00	1,600	160	0.100	Loss Time:	0.100
Northbound	Through	2.00	3,200	651	0.203 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	80	0.050	ICU:	0.692
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	724	0.251 *	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.13	1,806	267	0.055		N/S 1:	0.221 *
Southbound	Through	3.87	6,194	916	0.148		N/S 2:	0.187
	Left	1.00	1,600	30	0.019	*	E/W 1:	0.189 *
	Right	2.00	3,200	162	0.041		E/W 2:	0.000
Westbound	Through	1.00	1,600	113	0.071	*		
	Left	1.00	1,600	97	0.061		V/C Ratio:	0.410
	Right	0.00	0	194	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,419	0.202	*	ITS:	-0.070
	Left	1.00	1,600	62	0.039			
	Right	0.00	1,600	189	0.118	*	ICU:	0.440
Eastbound	Through	2.47	2,358	197	0.084			
	Left	1.53	2,198	204	0.093		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	158	0.053	N/S 1:	0.361 *
Southbound	Through	2.00	3,200	567	0.177	N/S 2:	0.230
	Left	1.00	1,600	284	0.178 *	E/W 1:	0.100 *
	Right	1.00	1,600	173	0.019	E/W 2:	0.065
Westbound	Through	2.00	3,200	36	0.011		
	Left	1.00	1,600	68	0.043 *	V/C Ratio:	0.461
	Right	1.00	1,600	23	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	585	0.183 *	ITS:	-0.070
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	28	0.000	ICU:	0.491
Eastbound	Through	2.00	3,200	155	0.057 *		
	Left	1.00	1,600	74	0.046	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	117	0.000	N/S 1:	0.319 *
Southbound	Through	2.00	3,200	725	0.263	N/S 2:	0.307
	Left	1.00	1,600	169	0.106 *	E/W 1:	0.250
	Right	1.00	1,600	112	0.017	E/W 2:	0.354 *
Westbound	Through	2.00	3,200	946	0.296 *		
	Left	1.00	1,600	147	0.092	V/C Ratio:	0.673
	Right	0.00	0	64	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	616	0.213 *	ITS:	-0.070
	Left	1.00	1,600	70	0.044		
	Right	1.00	1,600	85	0.031	ICU:	0.703
Eastbound	Through	2.00	3,200	504	0.158		
	Left	1.00	1,600	92	0.058 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	103	0.000	N/S 1:	0.449 *
Southbound	Through	2.00	3,200	847	0.297	N/S 2:	0.364
	Left	1.00	1,600	198	0.124 *	E/W 1:	0.418 *
	Right	1.00	1,600	194	0.059	E/W 2:	0.290
Westbound	Through	2.00	3,200	702	0.219		
	Left	1.00	1,600	157	0.098 *	V/C Ratio:	0.867
	Right	0.00	0	108	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	931	0.325 *	ITS:	-0.070
	Left	1.00	1,600	107	0.067		
	Right	1.00	1,600	111	0.036	ICU:	0.897
Eastbound	Through	2.00	3,200	1,025	0.320 *		
	Left	1.00	1,600	114	0.071	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	152	0.000	N/S 1:	0.238
Southbound	Through	2.00	3,200	703	0.267 *	N/S 2:	0.303 *
	Left	1.00	1,600	97	0.061	E/W 1:	0.279
	Right	0.00	0	82	0.000	E/W 2:	0.365 *
Westbound	Through	2.00	3,200	893	0.305 *		
	Left	1.00	1,600	136	0.085	V/C Ratio:	0.668
	Right	0.00	0	44	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	523	0.177	ITS:	-0.070
	Left	1.00	1,600	57	0.036 *		
	Right	0.00	0	90	0.000	ICU:	0.698
Eastbound	Through	2.00	3,200	532	0.194		
	Left	1.00	1,600	96	0.060 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	127	0.000	N/S 1:	0.366 *
Southbound	Through	2.00	3,200	771	0.281	N/S 2:	0.337
	Left	1.00	1,600	108	0.068 *	E/W 1:	0.540 *
	Right	0.00	0	106	0.000	E/W 2:	0.346
Westbound	Through	2.00	3,200	710	0.255		
	Left	1.00	1,600	102	0.064 *	V/C Ratio:	0.906
	Right	0.00	0	50	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	902	0.298 *	ITS:	-0.070
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	133	0.000	ICU:	0.936
Eastbound	Through	2.00	3,200	1,391	0.476 *		
	Left	1.00	1,600	146	0.091	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	76	0.000	N/S 1:	0.296
Southbound	Through	2.00	3,200	1,320	0.436 *	N/S 2:	0.498 *
	Left	1.00	1,600	71	0.044	E/W 1:	0.290
	Right	0.00	0	119	0.000	E/W 2:	0.355 *
Westbound	Through	2.00	3,200	837	0.299 *		
	Left	1.00	1,600	171	0.107	V/C Ratio:	0.853
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	766	0.252	ITS:	-0.070
	Left	1.00	1,600	99	0.062 *		
	Right	0.00	0	154	0.000	ICU:	0.883
Eastbound	Through	2.00	3,200	430	0.183		
	Left	1.00	1,600	90	0.056 *	LOS:	D

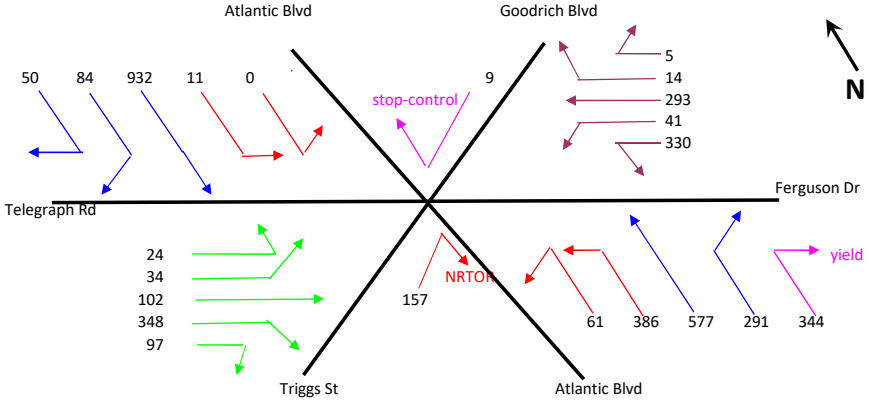
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	32	0.000	N/S 1:	0.471 *
Southbound	Through	2.00	3,200	1,263	0.405	N/S 2:	0.461
	Left	1.00	1,600	66	0.041 *	E/W 1:	0.492 *
	Right	0.00	0	75	0.000	E/W 2:	0.291
Westbound	Through	2.00	3,200	500	0.180		
	Left	1.00	1,600	73	0.046 *	V/C Ratio:	0.963
	Right	0.00	0	88	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,287	0.430 *	ITS:	-0.070
	Left	1.00	1,600	89	0.056		
	Right	0.00	0	229	0.000	ICU:	0.993
Eastbound	Through	2.00	3,200	1,197	0.446 *		
	Left	1.00	1,600	178	0.111	LOS:	E

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project with Full Mitigation Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{61 + 386}{2} = 224$ or

Southbound Left: $\frac{11 + 0}{1} = 11$ or

Northbound Right: 157

Critical Volume #1 (CV1): **224**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{577 + 291}{3} = 289$ or

Southbound Through + Right $\frac{932 + 84 + 50}{3} = 355$

Critical Volume #2 (CV2): **355**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{330 + 41}{1} = 371$ or

Westbound Through + Right: $\frac{293 + 14 + 5}{2} = 156$ or

Westbound Right: 14 + 5 = 19

Critical Volume #3 (CV3): **371**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{24 + 34 + 102}{1} = 160$ or

Eastbound Through: $\frac{348}{3} = 116$ or

Eastbound Right: 97

Critical Volume #4 (CV4): **160**

Critical Volume: 224 + 355 + 371 + 160 = **1,110**

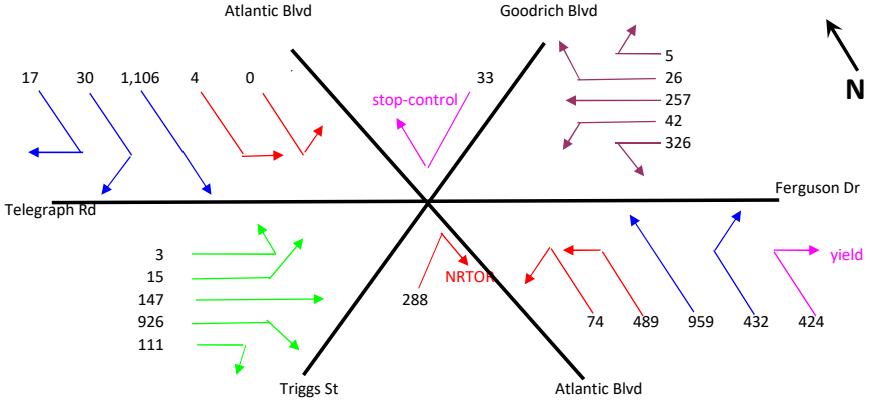
Intersection V/C: $\frac{1,110}{1,375} =$ **0.807**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.737** **Intersection LOS:** **C**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project with Full Mitigation Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{74 + 489}{2} = 282$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 288

Critical Volume #1 (CV1): **288**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{959 + 432}{3} = 464$ or

Southbound Through + Right $\frac{1,106 + 30 + 17}{3} = 384$

Critical Volume #2 (CV2): **464**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{326 + 42}{1} = 368$ or

Westbound Through + Right: $\frac{257 + 26 + 5}{2} = 144$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **368**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 15 + 147}{1} = 165$ or

Eastbound Through: $\frac{926}{3} = 308.7$ or

Eastbound Right: 111

Critical Volume #4 (CV4): **309**

Critical Volume: 288 + 464 + 368 + 309 = **1,428**

Intersection V/C: $\frac{1,428}{1,375} =$ **1.039**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.969** **Intersection LOS:** **E**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	255	0.000	N/S 1:	0.392
Southbound	Through	2.00	3,200	1,309	0.489 *	N/S 2:	0.510 *
	Left	1.00	1,600	214	0.134	E/W 1:	0.097
	Right	0.00	1,600	247	0.154 *	E/W 2:	0.194 *
Westbound	Through	2.00	1,600	124	0.118		
	Left	0.00	1,600	65	0.041	V/C Ratio:	0.704
	Right	0.00	0	79	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	746	0.258	ITS:	-0.070
	Left	1.00	1,600	33	0.021 *		
	Right	0.00	0	9	0.000	ICU:	0.734
Eastbound	Through	2.00	1,600	17	0.056		
	Left	0.00	1,600	64	0.040 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	212	0.000	N/S 1:	0.514 *
Southbound	Through	2.00	3,200	1,384	0.499	N/S 2:	0.505
	Left	1.00	1,600	154	0.096 *	E/W 1:	0.343 *
	Right	0.00	1,600	165	0.103	E/W 2:	0.281
Westbound	Through	2.00	1,600	29	0.054		
	Left	0.00	1,600	58	0.036 *	V/C Ratio:	0.857
	Right	0.00	0	44	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,292	0.418 *	ITS:	-0.070
	Left	1.00	1,600	9	0.006		
	Right	0.00	0	29	0.000	ICU:	0.887
Eastbound	Through	2.00	1,600	177	0.307 *		
	Left	0.00	1,600	285	0.178	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	14	0.000	N/S 1:	0.225
Southbound	Through	3.00	4,800	1,459	0.307 *	N/S 2:	0.362 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.024 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.386
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,078	0.225	ITS:	-0.070
	Left	1.00	1,600	88	0.055 *		
	Right	0.00	0	39	0.000	ICU:	0.416
Eastbound	Through	1.00	1,600	0	0.024 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.302 *
Southbound	Through	3.00	4,800	1,325	0.277	N/S 2:	0.291
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.049 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.351
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,449	0.302 *	ITS:	-0.070
	Left	1.00	1,600	22	0.014		
	Right	0.00	0	78	0.000	ICU:	0.381
Eastbound	Through	1.00	1,600	0	0.049 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	311	0.062	N/S 1:	0.299 *
Southbound	Through	2.00	3,200	832	0.260	N/S 2:	0.287
	Left	1.00	1,600	202	0.126 *	E/W 1:	0.173
	Right	0.00	0	172	0.000	E/W 2:	0.411 *
Westbound	Through	3.00	4,800	1,163	0.278 *		
	Left	1.00	1,600	58	0.036	V/C Ratio:	0.710
	Right	0.00	0	19	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	535	0.173 *	ITS:	-0.070
	Left	1.00	1,600	43	0.027		
	Right	0.00	0	35	0.000	ICU:	0.740
Eastbound	Through	3.00	4,800	621	0.137		
	Left	1.00	1,600	212	0.133 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	325	0.044	N/S 1:	0.491 *
Southbound	Through	2.00	3,200	812	0.254	N/S 2:	0.272
	Left	1.00	1,600	323	0.202 *	E/W 1:	0.274
	Right	0.00	0	203	0.000	E/W 2:	0.365 *
Westbound	Through	3.00	4,800	784	0.206 *		
	Left	1.00	1,600	54	0.034	V/C Ratio:	0.856
	Right	0.00	0	68	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	857	0.289 *	ITS:	-0.070
	Left	1.00	1,600	28	0.018		
	Right	0.00	0	39	0.000	ICU:	0.886
Eastbound	Through	3.00	4,800	1,111	0.240		
	Left	1.00	1,600	255	0.159 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.324 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.287 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	485	0.152		
	Left	1.00	1,600	252	0.158 *	V/C Ratio:	0.611
	Right	1.47	2,355	686	0.213	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.53	3,640	1,178	0.324 *		
	Right	3.00	4,800	1,313	0.000	ICU:	0.641
Eastbound	Through	2.00	3,200	414	0.129 *		
	Left	0.00	0	0	0.000	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.372 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.613 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	935	0.292		
	Left	1.00	1,600	642	0.401 *	V/C Ratio:	0.985
	Right	1.33	2,122	711	0.134	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.67	3,850	1,433	0.372 *		
	Right	3.00	4,800	2,027	0.050	ICU:	1.015
Eastbound	Through	2.00	3,200	679	0.212 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	71	0.000	N/S 1:	0.147 *
Southbound	Through	1.00	1,600	67	0.046 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.243
	Right	0.00	0	9	0.000	E/W 2:	0.338 *
Westbound	Through	2.00	3,200	439	0.140 *		
	Left	2.00	2,880	280	0.097	V/C Ratio:	0.485
	Right	0.00	1,600	22	0.014	Loss Time:	0.100
Northbound	Through	2.00	1,600	16	0.010	ITS:	-0.070
	Left	1.74	2,503	252	0.101 *		
	Right	0.00	0	67	0.000	ICU:	0.515
Eastbound	Through	3.00	4,800	636	0.146		
	Left	1.00	1,600	316	0.198 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	352	0.149	N/S 1:	0.294 *
Southbound	Through	1.00	1,600	272	0.184 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.406
	Right	0.00	0	7	0.000	E/W 2:	0.420 *
Westbound	Through	2.00	3,200	878	0.277 *		
	Left	2.00	2,880	445	0.155	V/C Ratio:	0.714
	Right	0.00	1,600	46	0.029	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	-0.070
	Left	1.64	2,361	259	0.110 *		
	Right	0.00	0	124	0.000	ICU:	0.744
Eastbound	Through	3.00	4,800	1,083	0.251		
	Left	1.00	1,600	228	0.143 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.98	3,173	78	0.000	N/S 1:	0.027 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.02	1,464	40	0.027 *	E/W 1:	0.120
	Right	1.00	1,600	86	0.026	E/W 2:	0.234 *
Westbound	Through	3.00	4,800	786	0.164 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.261
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.291
Eastbound	Through	2.00	3,200	383	0.120		
	Left	2.00	2,880	203	0.070 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	471	0.070	N/S 1:	0.141 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.070
	Left	1.00	1,600	225	0.141 *	E/W 1:	0.218
	Right	1.00	1,600	247	0.014	E/W 2:	0.312 *
Westbound	Through	3.00	4,800	754	0.157 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.453
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.483
Eastbound	Through	2.00	3,200	698	0.218		
	Left	2.00	2,880	445	0.155 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	27	0.000	N/S 1:	0.022 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	35	0.022 *	E/W 1:	0.070
	Right	0.00	0	115	0.000	E/W 2:	0.249 *
Westbound	Through	3.00	4,800	848	0.201 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.271
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.301
Eastbound	Through	3.00	4,800	338	0.070		
	Left	1.00	1,600	76	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	164	0.077	N/S 1:	0.153 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.077
	Left	1.00	1,600	244	0.153 *	E/W 1:	0.178
	Right	0.00	0	115	0.000	E/W 2:	0.247 *
Westbound	Through	3.00	4,800	823	0.195 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.400
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.430
Eastbound	Through	3.00	4,800	856	0.178		
	Left	1.00	1,600	83	0.052 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.49	791	46	0.038	N/S 1:	0.065 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.038
	Left	1.51	2,168	140	0.065 *	E/W 1:	0.061
	Right	0.00	0	200	0.000	E/W 2:	0.269 *
Westbound	Through	3.00	4,800	891	0.228 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.334
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.364
Eastbound	Through	3.00	4,800	285	0.059		
	Left	1.00	1,600	65	0.041 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.45	716	94	0.099	N/S 1:	0.146 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.099
	Left	1.55	2,235	326	0.146 *	E/W 1:	0.208
	Right	0.00	0	156	0.000	E/W 2:	0.262 *
Westbound	Through	3.00	4,800	788	0.197 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.408
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.438
Eastbound	Through	3.00	4,800	998	0.208		
	Left	1.00	1,600	104	0.065 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.148 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.277 *
	Right	0.00	0	10	0.000	E/W 2:	0.185
Westbound	Through	3.00	4,800	878	0.185		
	Left	2.00	2,880	543	0.189 *	V/C Ratio:	0.425
	Right	1.00	1,600	325	0.015	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.131 *	ITS:	-0.070
	Left	0.00	1,600	204	0.128		
	Right	0.00	0	37	0.000	ICU:	0.455
Eastbound	Through	3.00	4,800	383	0.088 *		
	Left	1.00	1,600	0	0.000	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.187 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.478 *
	Right	0.00	0	56	0.000	E/W 2:	0.186
Westbound	Through	3.00	4,800	726	0.163		
	Left	2.00	2,880	656	0.228 *	V/C Ratio:	0.665
	Right	1.00	1,600	230	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.126 *	ITS:	-0.070
	Left	0.00	1,600	188	0.118		
	Right	0.00	0	66	0.000	ICU:	0.695
Eastbound	Through	3.00	4,800	1,133	0.250 *		
	Left	1.00	1,600	36	0.023	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	569	0.264		N/S 1:	0.431 *
Southbound	Through	2.00	3,200	788	0.246		N/S 2:	0.316
	Left	1.00	1,600	34	0.021	*	E/W 1:	0.213
	Right	0.00	0	57	0.000		E/W 2:	0.307 *
Westbound	Through	2.00	3,200	632	0.215	*		
	Left	1.00	1,600	273	0.171		V/C Ratio:	0.738
	Right	0.00	0	169	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,142	0.410	*	ITS:	-0.070
	Left	2.00	2,880	150	0.052			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.768
Eastbound	Through	2.00	3,200	133	0.042			
	Left	2.00	2,880	265	0.092	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	618	0.235		N/S 1:	0.493 *
Southbound	Through	2.00	3,200	710	0.222		N/S 2:	0.301
	Left	1.00	1,600	73	0.046	*	E/W 1:	0.316
	Right	0.00	0	51	0.000		E/W 2:	0.339 *
Westbound	Through	2.00	3,200	549	0.188	*		
	Left	1.00	1,600	228	0.143		V/C Ratio:	0.832
	Right	0.00	0	285	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,144	0.447	*	ITS:	-0.070
	Left	2.00	2,880	191	0.066			
	Right [1]	1.00	1,600	0	0.000		ICU:	0.862
Eastbound	Through	2.00	3,200	555	0.173			
	Left	2.00	2,880	436	0.151	*	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	76	0.040	N/S 1:	0.381
Southbound	Through	2.00	3,200	1,259	0.393 *	N/S 2:	0.397 *
	Left	1.00	1,600	80	0.050	E/W 1:	0.301 *
	Right	1.00	1,600	230	0.119	E/W 2:	0.244
Westbound	Through	2.00	3,200	731	0.228		
	Left	2.00	2,880	638	0.222 *	V/C Ratio:	0.698
	Right	1.00	1,600	465	0.069	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,052	0.331	ITS:	-0.070
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	126	0.079 *	ICU:	0.728
Eastbound	Through	2.00	3,200	184	0.058		
	Left	1.00	1,600	25	0.016	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	67	0.030	N/S 1:	0.349 *
Southbound	Through	2.00	3,200	1,091	0.341	N/S 2:	0.343
	Left	1.00	1,600	111	0.069 *	E/W 1:	0.347 *
	Right	1.00	1,600	359	0.190	E/W 2:	0.213
Westbound	Through	2.00	3,200	390	0.122		
	Left	2.00	2,880	344	0.119 *	V/C Ratio:	0.696
	Right	1.00	1,600	450	0.162	Loss Time:	0.100
Northbound	Through	2.00	3,200	892	0.280 *	ITS:	-0.070
	Left	0.00	1,600	3	0.002		
	Right [1]	1.00	1,600	283	0.177	ICU:	0.726
Eastbound	Through	2.00	3,200	728	0.228 *		
	Left	1.00	1,600	37	0.023	LOS:	C

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.049
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.243 *
	Left	0.00	0	0	0.000	E/W 1:	0.557 *
	Right	0.00	0	0	0.000	E/W 2:	0.315
Westbound	Through	2.00	3,200	1,009	0.315		
	Left	1.00	1,600	541	0.338 *	V/C Ratio:	0.800
	Right	0.03	46	10	0.049	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.97	2,839	689	0.243 *		
	Right	0.00	0	175	0.000	ICU:	0.830
Eastbound	Through	2.00	3,200	525	0.219 *		
	Left	0.00	0	0	0.000	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.017
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.187 *
	Left	0.00	0	0	0.000	E/W 1:	0.691 *
	Right	0.00	0	0	0.000	E/W 2:	0.189
Westbound	Through	2.00	3,200	605	0.189		
	Left	1.00	1,600	483	0.302 *	V/C Ratio:	0.878
	Right	0.11	178	30	0.017	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.89	2,719	508	0.187 *		
	Right	0.00	0	273	0.000	ICU:	0.908
Eastbound	Through	2.00	3,200	972	0.389 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.397
Southbound	Through	1.00	1,600	914	0.571 *	N/S 2:	0.571 *
	Left	2.00	2,880	680	0.236	E/W 1:	0.000
	Right	3.00	4,800	1,111	0.113 *	E/W 2:	0.113 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.684
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	767	0.161	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.714
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.615
Southbound	Through	1.00	1,600	1,579	0.987 *	N/S 2:	0.987 *
	Left	2.00	2,880	1,133	0.393	E/W 1:	0.000
	Right	3.00	4,800	1,064	0.025 *	E/W 2:	0.025 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	1.012
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,036	0.222	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.042
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.202 *
Southbound	Through	2.00	3,200	466	0.149	N/S 2:	0.152
	Left	2.00	2,880	208	0.072 *	E/W 1:	0.190 *
	Right	1.96	3,141	531	0.133	E/W 2:	0.000
Westbound	Through	0.04	59	10	0.169 *		
	Left	1.00	1,600	263	0.164	V/C Ratio:	0.392
	Right	0.00	0	36	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	589	0.130 *	ITS:	-0.070
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.422
Eastbound	Through	2.00	3,200	61	0.021 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	19	0.000	N/S 1:	0.276 *
Southbound	Through	2.00	3,200	830	0.265	N/S 2:	0.267
	Left	2.00	2,880	321	0.111 *	E/W 1:	0.122 *
	Right	1.91	3,062	310	0.046	E/W 2:	0.000
Westbound	Through	0.09	138	14	0.101 *		
	Left	1.00	1,600	105	0.066	V/C Ratio:	0.398
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	755	0.165 *	ITS:	-0.070
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	18	0.000	ICU:	0.428
Eastbound	Through	2.00	3,200	31	0.021 *		
	Left	0.00	1,600	18	0.011	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	156	0.069		N/S 1:	0.156
Southbound	Through	2.00	3,200	673	0.210	*	N/S 2:	0.241 *
	Left	1.00	1,600	28	0.018		E/W 1:	0.158
	Right	0.00	0	38	0.000		E/W 2:	0.182 *
Westbound	Through	3.00	4,800	565	0.126	*		
	Left	1.00	1,600	53	0.033		V/C Ratio:	0.423
	Right	0.00	0	39	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	622	0.138		ITS:	-0.070
	Left	1.00	1,600	50	0.031	*		
	Right	0.00	0	77	0.000		ICU:	0.453
Eastbound	Through	3.00	4,800	525	0.125			
	Left	1.00	1,600	90	0.056	*	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	192	0.092		N/S 1:	0.204
Southbound	Through	2.00	3,200	1,175	0.367	*	N/S 2:	0.426 *
	Left	1.00	1,600	28	0.018		E/W 1:	0.198
	Right	0.00	0	60	0.000		E/W 2:	0.256 *
Westbound	Through	3.00	4,800	898	0.200	*		
	Left	1.00	1,600	88	0.055		V/C Ratio:	0.682
	Right	0.00	0	54	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	837	0.186		ITS:	-0.070
	Left	1.00	1,600	95	0.059	*		
	Right	0.00	0	62	0.000		ICU:	0.712
Eastbound	Through	3.00	4,800	625	0.143			
	Left	1.00	1,600	89	0.056	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.131
Southbound	Through	3.00	4,800	539	0.118 *	N/S 2:	0.170 *
	Left	1.00	1,600	45	0.028	E/W 1:	0.123
	Right	0.00	0	25	0.000	E/W 2:	0.152 *
Westbound	Through	3.00	4,800	644	0.139 *		
	Left	1.00	1,600	41	0.026	V/C Ratio:	0.322
	Right	0.00	0	21	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	471	0.103	ITS:	-0.070
	Left	1.00	1,600	83	0.052 *		
	Right	0.00	0	85	0.000	ICU:	0.352
Eastbound	Through	3.00	4,800	380	0.097		
	Left	1.00	1,600	21	0.013 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	35	0.000	N/S 1:	0.192
Southbound	Through	3.00	4,800	655	0.144 *	N/S 2:	0.215 *
	Left	1.00	1,600	62	0.039	E/W 1:	0.201 *
	Right	0.00	0	36	0.000	E/W 2:	0.190
Westbound	Through	3.00	4,800	753	0.164		
	Left	1.00	1,600	33	0.021 *	V/C Ratio:	0.416
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	703	0.153	ITS:	-0.070
	Left	1.00	1,600	113	0.071 *		
	Right	0.00	0	101	0.000	ICU:	0.446
Eastbound	Through	3.00	4,800	765	0.180 *		
	Left	1.00	1,600	42	0.026	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.288 *
Southbound	Through	3.00	4,800	1,265	0.264	N/S 2:	0.264
	Left	1.00	1,600	114	0.071 *	E/W 1:	0.073
	Right	0.00	0	0	0.000	E/W 2:	0.258 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.546
	Right	1.00	1,600	131	0.082	Loss Time:	0.100
Northbound	Through	2.00	3,200	695	0.217 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	116	0.073	ICU:	0.576
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	743	0.258 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.617 *
Southbound	Through	3.00	4,800	1,101	0.229	N/S 2:	0.229
	Left	1.00	1,600	310	0.194 *	E/W 1:	0.018
	Right	0.00	0	0	0.000	E/W 2:	0.094 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.711
	Right	1.00	1,600	333	0.208	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,354	0.423 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	29	0.018	ICU:	0.741
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	270	0.094 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	2.00	3,200	857	0.138		N/S 1:	0.266 *
Southbound	Through	3.00	4,800	728	0.152		N/S 2:	0.208
	Left	1.00	1,600	72	0.045	*	E/W 1:	0.344 *
	Right	2.00	3,200	281	0.065		E/W 2:	0.000
Westbound	Through	1.00	1,600	285	0.178	*		
	Left	1.00	1,600	156	0.098		V/C Ratio:	0.610
	Right	0.00	0	327	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,440	0.221	*	ITS:	-0.070
	Left	1.00	1,600	89	0.056			
	Right	0.00	0	132	0.000		ICU:	0.640
Eastbound	Through	3.00	4,800	667	0.166	*		
	Left	1.00	1,600	207	0.129		LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	337	0.000		N/S 1:	0.243
Southbound	Through	4.00	6,400	1,380	0.216	*	N/S 2:	0.246 *
	Left	1.00	1,600	61	0.038		E/W 1:	0.481 *
	Right	2.00	3,200	537	0.149		E/W 2:	0.000
Westbound	Through	1.00	1,600	204	0.128			
	Left	1.00	1,600	312	0.195	*	V/C Ratio:	0.727
	Right	0.00	0	236	0.000		Loss Time:	0.100
Northbound	Through	5.00	8,000	1,402	0.205		ITS:	-0.070
	Left	1.00	1,600	48	0.030	*		
	Right	0.00	1,600	458	0.286	*	ICU:	0.757
Eastbound	Through	2.57	2,511	588	0.234			
	Left	1.43	2,060	536	0.260		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	790	0.389	N/S 1:	0.519 *
Southbound	Through	2.00	3,200	902	0.282	N/S 2:	0.441
	Left	1.00	1,600	318	0.199 *	E/W 1:	0.211
	Right	1.00	1,600	394	0.147 *	E/W 2:	0.251 *
Westbound	Through	2.00	3,200	215	0.067		
	Left	1.00	1,600	197	0.123	V/C Ratio:	0.770
	Right	1.00	1,600	110	0.007	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,023	0.320 *	ITS:	-0.070
	Left	1.00	1,600	83	0.052		
	Right	0.00	0	33	0.000	ICU:	0.800
Eastbound	Through	2.00	3,200	247	0.088		
	Left	1.00	1,600	167	0.104 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	318	0.049	N/S 1:	0.497 *
Southbound	Through	2.00	3,200	1,170	0.366	N/S 2:	0.401
	Left	1.00	1,600	321	0.201 *	E/W 1:	0.374 *
	Right	1.00	1,600	185	0.015	E/W 2:	0.175
Westbound	Through	2.00	3,200	84	0.026		
	Left	1.00	1,600	72	0.045 *	V/C Ratio:	0.871
	Right	1.00	1,600	202	0.104	Loss Time:	0.100
Northbound	Through	2.00	3,200	946	0.296 *	ITS:	-0.070
	Left	1.00	1,600	56	0.035		
	Right	0.00	0	115	0.000	ICU:	0.901
Eastbound	Through	2.00	3,200	937	0.329 *		
	Left	1.00	1,600	239	0.149	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	175	0.000		N/S 1:	0.423 *
Southbound	Through	2.00	3,200	787	0.301		N/S 2:	0.389
	Left	1.00	1,600	309	0.193	*	E/W 1:	0.358 *
	Right	1.00	1,600	242	0.055		E/W 2:	0.338
Westbound	Through	2.00	3,200	776	0.243			
	Left	1.00	1,600	177	0.111	*	V/C Ratio:	0.781
	Right	0.00	0	134	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	601	0.230	*	ITS:	-0.070
	Left	1.00	1,600	140	0.088			
	Right	1.00	1,600	126	0.035		ICU:	0.811
Eastbound	Through	2.00	3,200	790	0.247	*		
	Left	1.00	1,600	152	0.095		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	197	0.000		N/S 1:	0.271
Southbound	Through	2.00	3,200	964	0.363	*	N/S 2:	0.422 *
	Left	1.00	1,600	114	0.071		E/W 1:	0.373 *
	Right	0.00	0	92	0.000		E/W 2:	0.350
Westbound	Through	2.00	3,200	693	0.245			
	Left	1.00	1,600	147	0.092	*	V/C Ratio:	0.795
	Right	0.00	0	68	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	572	0.200		ITS:	-0.070
	Left	1.00	1,600	95	0.059	*		
	Right	0.00	0	150	0.000		ICU:	0.825
Eastbound	Through	2.00	3,200	749	0.281	*		
	Left	1.00	1,600	168	0.105		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

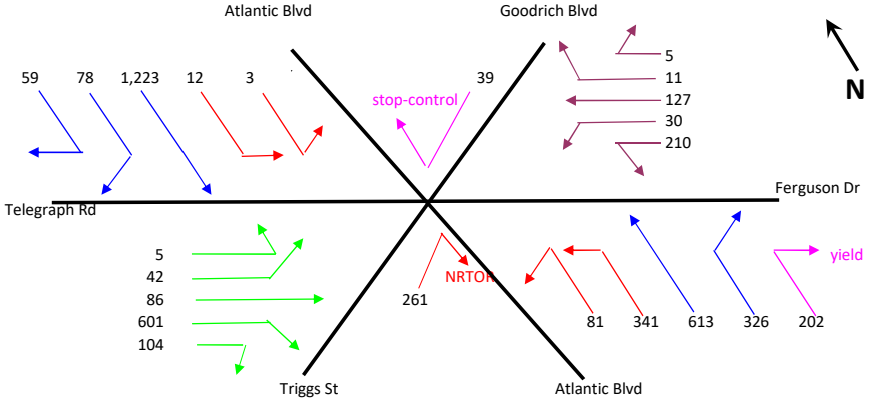
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	59	0.000		N/S 1:	0.329
Southbound	Through	2.00	3,200	877	0.293	*	N/S 2:	0.399 *
	Left	1.00	1,600	66	0.041		E/W 1:	0.273 *
	Right	0.00	0	105	0.000		E/W 2:	0.209
Westbound	Through	2.00	3,200	378	0.151			
	Left	1.00	1,600	96	0.060	*	V/C Ratio:	0.672
	Right	0.00	0	80	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	843	0.288		ITS:	-0.070
	Left	1.00	1,600	169	0.106	*		
	Right	0.00	0	180	0.000		ICU:	0.702
Eastbound	Through	2.00	3,200	502	0.213	*		
	Left	1.00	1,600	93	0.058		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Project with Full Mitigation Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{81 + 341}{2} = 211$ or

Southbound Left: $\frac{12 + 3}{1} = 15$ or

Northbound Right: 261

Critical Volume #1 (CV1): **261**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{613 + 326}{3} = 313$ or

Southbound Through + Right $\frac{1,223 + 78 + 59}{3} = 453$

Critical Volume #2 (CV2): **453**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{210 + 30}{1} = 240$ or

Westbound Through + Right: $\frac{127 + 11 + 5}{2} = 72$ or

Westbound Right: 11 + 5 = 16

Critical Volume #3 (CV3): **240**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 42 + 86}{1} = 133$ or

Eastbound Through: $\frac{601}{3} = 200.3$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **200**

Critical Volume: 261 + 453 + 240 + 200 = **1,154**

Intersection V/C: $\frac{1,154}{1,375} =$ **0.84**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.770** **Intersection LOS:** **C**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	144	0.000		N/S 1:	0.354 *
Southbound	Through	2.00	3,200	961	0.345		N/S 2:	0.351
	Left	1.00	1,600	80	0.050	*	E/W 1:	0.098
	Right	0.00	1,600	101	0.063	*	E/W 2:	0.129 *
Westbound	Through	2.00	1,600	14	0.021			
	Left	0.00	1,600	19	0.012		V/C Ratio:	0.483
	Right	0.00	0	7	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	965	0.304	*	ITS:	-0.070
	Left	1.00	1,600	10	0.006			
	Right	0.00	0	19	0.000		ICU:	0.513
Eastbound	Through	2.00	1,600	12	0.086			
	Left	0.00	1,600	106	0.066	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	2	0.000		N/S 1:	0.216
Southbound	Through	3.00	4,800	1,049	0.219	*	N/S 2:	0.232 *
	Left	1.00	1,600	0	0.000		E/W 1:	0.015 *
	Right	0.50	800	0	0.000		E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000			
	Left	0.50	800	0	0.000	*	V/C Ratio:	0.247
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	1,036	0.216		ITS:	-0.070
	Left	1.00	1,600	20	0.013	*		
	Right	0.00	0	24	0.000		ICU:	0.277
Eastbound	Through	1.00	1,600	0	0.015	*		
	Left	1.00	1,600	3	0.002		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	267	0.020		N/S 1:	0.320 *
Southbound	Through	2.00	3,200	523	0.163		N/S 2:	0.174
	Left	1.00	1,600	225	0.141	*	E/W 1:	0.190
	Right	0.00	0	205	0.000		E/W 2:	0.343 *
Westbound	Through	3.00	4,800	736	0.196	*		
	Left	1.00	1,600	46	0.029		V/C Ratio:	0.663
	Right	0.00	0	43	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	529	0.179	*	ITS:	-0.070
	Left	1.00	1,600	17	0.011			
	Right	0.00	0	25	0.000		ICU:	0.693
Eastbound	Through	3.00	4,800	746	0.161			
	Left	1.00	1,600	235	0.147	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.316 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.552 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	655	0.205		
	Left	1.00	1,600	488	0.305 *	V/C Ratio:	0.868
	Right	2.00	3,200	1,152	0.208	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.00	2,880	911	0.316 *		
	Right	3.00	4,800	1,552	0.007	ICU:	0.898
Eastbound	Through	2.00	3,200	791	0.247 *		
	Left	0.00	0	0	0.000	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	231	0.037		N/S 1:	0.234 *
Southbound	Through	1.00	1,600	171	0.125	*	N/S 2:	0.000
	Left	0.00	1,600	29	0.018		E/W 1:	0.496 *
	Right	0.00	0	13	0.000		E/W 2:	0.447
Westbound	Through	2.00	3,200	732	0.233			
	Left	2.00	2,880	473	0.164	*	V/C Ratio:	0.730
	Right	0.00	1,600	116	0.073		Loss Time:	0.100
Northbound	Through	2.00	1,600	9	0.006		ITS:	-0.070
	Left	1.21	1,737	190	0.109	*		
	Right	0.00	0	72	0.000		ICU:	0.760
Eastbound	Through	3.00	4,800	1,522	0.332	*		
	Left	1.00	1,600	343	0.214		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.81	2,894	425	0.001		N/S 1:	0.163 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.001
	Left	1.19	1,716	280	0.163	*	E/W 1:	0.210
	Right	1.00	1,600	490	0.143		E/W 2:	0.476 *
Westbound	Through	3.00	4,800	885	0.184	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.639
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.669
Eastbound	Through	2.00	3,200	672	0.210			
	Left	2.00	2,880	840	0.292	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	322	0.155		N/S 1:	0.186 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.155
	Left	1.00	1,600	297	0.186	*	E/W 1:	0.164
	Right	0.00	0	213	0.000		E/W 2:	0.353 *
Westbound	Through	3.00	4,800	1,038	0.261	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.539
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.569
Eastbound	Through	3.00	4,800	789	0.164			
	Left	1.00	1,600	147	0.092	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.55	878	87	0.070		N/S 1:	0.110 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.070
	Left	1.45	2,090	230	0.110	*	E/W 1:	0.191
	Right	0.00	0	187	0.000		E/W 2:	0.341 *
Westbound	Through	3.00	4,800	1,164	0.282	*		
	Left	0.00	1,600	1	0.001		V/C Ratio:	0.451
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.481
Eastbound	Through	3.00	4,800	912	0.190			
	Left	1.00	1,600	94	0.059	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	17	0.000		N/S 1:	0.296 *
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000
	Left	1.00	1,600	32	0.020		E/W 1:	0.425 *
	Right	0.00	0	57	0.000		E/W 2:	0.243
Westbound	Through	3.00	4,800	1,001	0.220			
	Left	2.00	2,880	536	0.186	*	V/C Ratio:	0.721
	Right	1.00	1,600	229	0.000		Loss Time:	0.100
Northbound	Through	1.00	1,600	33	0.262	*	ITS:	-0.070
	Left	0.00	1,600	386	0.241			
	Right	0.00	0	80	0.000		ICU:	0.751
Eastbound	Through	3.00	4,800	1,065	0.239	*		
	Left	1.00	1,600	36	0.023		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	596	0.219 *	N/S 1:	0.382
Southbound	Through	2.00	3,200	488	0.153	N/S 2:	0.384 *
	Left	1.00	1,600	70	0.044	E/W 1:	0.242
	Right	0.00	0	50	0.000	E/W 2:	0.357 *
Westbound	Through	2.00	3,200	604	0.204 *		
	Left	1.00	1,600	191	0.119	V/C Ratio:	0.741
	Right	0.00	0	201	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	882	0.338	ITS:	-0.070
	Left	2.00	2,880	476	0.165 *		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.771
Eastbound	Through	2.00	3,200	393	0.123		
	Left	2.00	2,880	441	0.153 *	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	143	0.089	N/S 1:	0.176
Southbound	Through	2.00	3,200	623	0.195 *	N/S 2:	0.261 *
	Left	1.00	1,600	33	0.021	E/W 1:	0.230 *
	Right	1.00	1,600	354	0.221 *	E/W 2:	0.230
Westbound	Through	2.00	3,200	561	0.175		
	Left	2.00	2,880	295	0.102	V/C Ratio:	0.491
	Right	1.00	1,600	332	0.105	Loss Time:	0.100
Northbound	Through	2.00	3,200	496	0.155	ITS:	-0.070
	Left	1.00	1,600	105	0.066 *		
	Right [1]	1.00	1,600	204	0.128	ICU:	0.521
Eastbound	Through	2.00	3,200	384	0.120		
	Left	1.00	1,600	14	0.009 *	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.058
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.167 *
	Left	0.00	0	0	0.000		E/W 1:	0.436 *
	Right	0.00	0	0	0.000		E/W 2:	0.195
Westbound	Through	2.00	3,200	625	0.195			
	Left	1.00	1,600	294	0.184	*	V/C Ratio:	0.603
	Right	0.08	133	20	0.058		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	-0.070
	Left	1.92	2,760	461	0.167	*		
	Right	0.00	0	202	0.000		ICU:	0.633
Eastbound	Through	2.00	3,200	605	0.252	*		
	Left	0.00	0	0	0.000		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.471
Southbound	Through	1.00	1,600	1,190	0.744 *	N/S 2:	0.744 *
	Left	2.00	2,880	779	0.270	E/W 1:	0.000
	Right	3.00	4,800	1,099	0.094 *	E/W 2:	0.094 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.838
	Right	0.00	0	32	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	932	0.201	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.868
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	25	0.000		N/S 1:	0.211 *
Southbound	Through	2.00	3,200	512	0.168		N/S 2:	0.171
	Left	2.00	2,880	316	0.110	*	E/W 1:	0.217 *
	Right	1.98	3,165	629	0.144		E/W 2:	0.000
Westbound	Through	0.02	35	7	0.199	*		
	Left	1.00	1,600	44	0.028		V/C Ratio:	0.428
	Right	0.00	0	39	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	447	0.101	*	ITS:	-0.070
	Left	1.00	1,600	5	0.003			
	Right	0.00	0	9	0.000		ICU:	0.458
Eastbound	Through	2.00	3,200	43	0.018	*		
	Left	0.00	1,600	7	0.004		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	203	0.087	N/S 1:	0.197
Southbound	Through	2.00	3,200	840	0.263 *	N/S 2:	0.298 *
	Left	1.00	1,600	49	0.031	E/W 1:	0.154
	Right	0.00	0	63	0.000	E/W 2:	0.196 *
Westbound	Through	3.00	4,800	493	0.116 *		
	Left	1.00	1,600	87	0.054	V/C Ratio:	0.494
	Right	0.00	0	84	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	715	0.166	ITS:	-0.070
	Left	1.00	1,600	56	0.035 *		
	Right	0.00	0	52	0.000	ICU:	0.524
Eastbound	Through	3.00	4,800	426	0.100		
	Left	1.00	1,600	128	0.080 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	46	0.000		N/S 1:	0.110
Southbound	Through	3.00	4,800	411	0.095	*	N/S 2:	0.146 *
	Left	1.00	1,600	41	0.026		E/W 1:	0.141 *
	Right	0.00	0	37	0.000		E/W 2:	0.124
Westbound	Through	3.00	4,800	506	0.113			
	Left	1.00	1,600	41	0.026	*	V/C Ratio:	0.287
	Right	0.00	0	34	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	369	0.084		ITS:	-0.070
	Left	1.00	1,600	81	0.051	*		
	Right	0.00	0	46	0.000		ICU:	0.317
Eastbound	Through	3.00	4,800	507	0.115	*		
	Left	1.00	1,600	18	0.011		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.453 *
Southbound	Through	3.00	4,800	786	0.164	N/S 2:	0.164
	Left	1.00	1,600	350	0.219 *	E/W 1:	0.054
	Right	0.00	0	0	0.000	E/W 2:	0.269 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.722
	Right	1.00	1,600	171	0.107	Loss Time:	0.100
Northbound	Through	2.00	3,200	749	0.234 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	86	0.054	ICU:	0.752
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	774	0.269 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.11	1,780	299	0.060	N/S 1:	0.265 *
Southbound	Through	3.89	6,220	1,045	0.168	N/S 2:	0.209
	Left	1.00	1,600	65	0.041 *	E/W 1:	0.214 *
	Right	2.00	3,200	211	0.046	E/W 2:	0.000
Westbound	Through	1.00	1,600	138	0.086 *		
	Left	1.00	1,600	104	0.065	V/C Ratio:	0.479
	Right	0.00	0	208	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,585	0.224 *	ITS:	-0.070
	Left	1.00	1,600	66	0.041		
	Right	0.00	1,600	205	0.128 *	ICU:	0.509
Eastbound	Through	2.50	2,405	233	0.097		
	Left	1.50	2,155	232	0.108	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	169	0.056		N/S 1:	0.400 *
Southbound	Through	2.00	3,200	619	0.193		N/S 2:	0.257
	Left	1.00	1,600	316	0.198	*	E/W 1:	0.132 *
	Right	1.00	1,600	205	0.029		E/W 2:	0.078
Westbound	Through	2.00	3,200	82	0.026			
	Left	1.00	1,600	85	0.053	*	V/C Ratio:	0.532
	Right	1.00	1,600	36	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	645	0.202	*	ITS:	-0.070
	Left	1.00	1,600	103	0.064			
	Right	0.00	0	42	0.000		ICU:	0.562
Eastbound	Through	2.00	3,200	210	0.079	*		
	Left	1.00	1,600	79	0.049		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	121	0.000	N/S 1:	0.351 *
Southbound	Through	2.00	3,200	833	0.298	N/S 2:	0.343
	Left	1.00	1,600	174	0.109 *	E/W 1:	0.263
	Right	1.00	1,600	116	0.018	E/W 2:	0.377 *
Westbound	Through	2.00	3,200	1,017	0.318 *		
	Left	1.00	1,600	151	0.094	V/C Ratio:	0.728
	Right	0.00	0	66	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	708	0.242 *	ITS:	-0.070
	Left	1.00	1,600	72	0.045		
	Right	1.00	1,600	87	0.032	ICU:	0.758
Eastbound	Through	2.00	3,200	542	0.169		
	Left	1.00	1,600	95	0.059 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	106	0.000	N/S 1:	0.497 *
Southbound	Through	2.00	3,200	972	0.337	N/S 2:	0.406
	Left	1.00	1,600	204	0.128 *	E/W 1:	0.445 *
	Right	1.00	1,600	200	0.061	E/W 2:	0.310
Westbound	Through	2.00	3,200	754	0.236		
	Left	1.00	1,600	162	0.101 *	V/C Ratio:	0.942
	Right	0.00	0	111	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,069	0.369 *	ITS:	-0.070
	Left	1.00	1,600	110	0.069		
	Right	1.00	1,600	114	0.037	ICU:	0.972
Eastbound	Through	2.00	3,200	1,102	0.344 *		
	Left	1.00	1,600	118	0.074	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	157	0.000		N/S 1:	0.265
Southbound	Through	2.00	3,200	807	0.301	*	N/S 2:	0.338 *
	Left	1.00	1,600	100	0.063		E/W 1:	0.295
	Right	0.00	0	84	0.000		E/W 2:	0.388 *
Westbound	Through	2.00	3,200	960	0.326	*		
	Left	1.00	1,600	140	0.088		V/C Ratio:	0.726
	Right	0.00	0	45	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	601	0.202		ITS:	-0.070
	Left	1.00	1,600	59	0.037	*		
	Right	0.00	0	92	0.000		ICU:	0.756
Eastbound	Through	2.00	3,200	571	0.207			
	Left	1.00	1,600	99	0.062	*	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	130	0.000		N/S 1:	0.409 *
Southbound	Through	2.00	3,200	884	0.317		N/S 2:	0.374
	Left	1.00	1,600	111	0.069	*	E/W 1:	0.576 *
	Right	0.00	0	109	0.000		E/W 2:	0.367
Westbound	Through	2.00	3,200	764	0.273			
	Left	1.00	1,600	105	0.066	*	V/C Ratio:	0.985
	Right	0.00	0	52	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,035	0.340	*	ITS:	-0.070
	Left	1.00	1,600	91	0.057			
	Right	0.00	0	136	0.000		ICU:	1.015
Eastbound	Through	2.00	3,200	1,495	0.510	*		
	Left	1.00	1,600	150	0.094		LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	78	0.000		N/S 1:	0.334
Southbound	Through	2.00	3,200	1,517	0.498	*	N/S 2:	0.562 *
	Left	1.00	1,600	74	0.046		E/W 1:	0.305
	Right	0.00	0	123	0.000		E/W 2:	0.378 *
Westbound	Through	2.00	3,200	900	0.320	*		
	Left	1.00	1,600	177	0.111		V/C Ratio:	0.940
	Right	0.00	0	41	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	881	0.288		ITS:	-0.070
	Left	1.00	1,600	102	0.064	*		
	Right	0.00	0	159	0.000		ICU:	0.970
Eastbound	Through	2.00	3,200	462	0.194			
	Left	1.00	1,600	93	0.058	*	LOS:	E

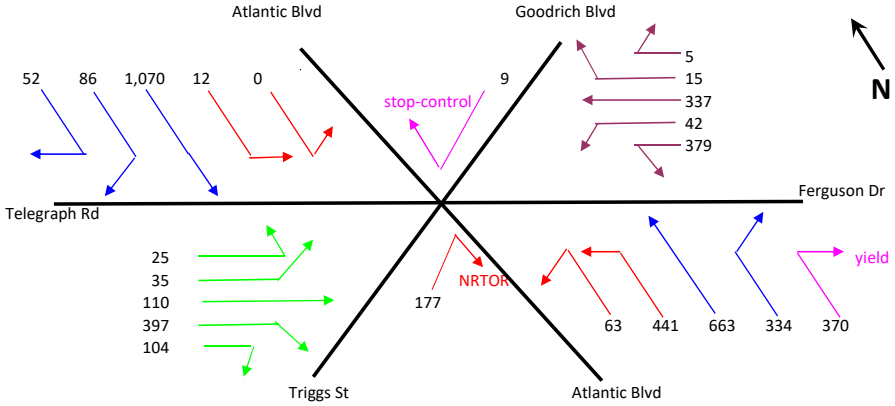
WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	33	0.000		N/S 1:	0.533 *
Southbound	Through	2.00	3,200	1,451	0.464		N/S 2:	0.521
	Left	1.00	1,600	68	0.043	*	E/W 1:	0.524 *
	Right	0.00	0	77	0.000		E/W 2:	0.306
Westbound	Through	2.00	3,200	538	0.192			
	Left	1.00	1,600	76	0.048	*	V/C Ratio:	1.057
	Right	0.00	0	90	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	1,478	0.490	*	ITS:	-0.070
	Left	1.00	1,600	91	0.057			
	Right	0.00	0	235	0.000		ICU:	1.087
Eastbound	Through	2.00	3,200	1,287	0.476	*		
	Left	1.00	1,600	183	0.114		LOS:	F

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project with Full Mitigation Conditions - AM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{63 + 441}{2} = 252$ or

Southbound Left: $\frac{12 + 0}{1} = 12$ or

Northbound Right: 177

Critical Volume #1 (CV1): **252**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{663 + 334}{3} = 332$ or

Southbound Through + Right $\frac{1,070 + 86 + 52}{3} = 403$

Critical Volume #2 (CV2): **403**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{379 + 42}{1} = 421$ or

Westbound Through + Right: $\frac{337 + 15 + 5}{2} = 179$ or

Westbound Right: 15 + 5 = 20

Critical Volume #3 (CV3): **421**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{25 + 35 + 110}{1} = 170$ or

Eastbound Through: $\frac{397}{3} = 132.3$ or

Eastbound Right: 104

Critical Volume #4 (CV4): **170**

Critical Volume: 252 + 403 + 421 + 170 = **1,246**

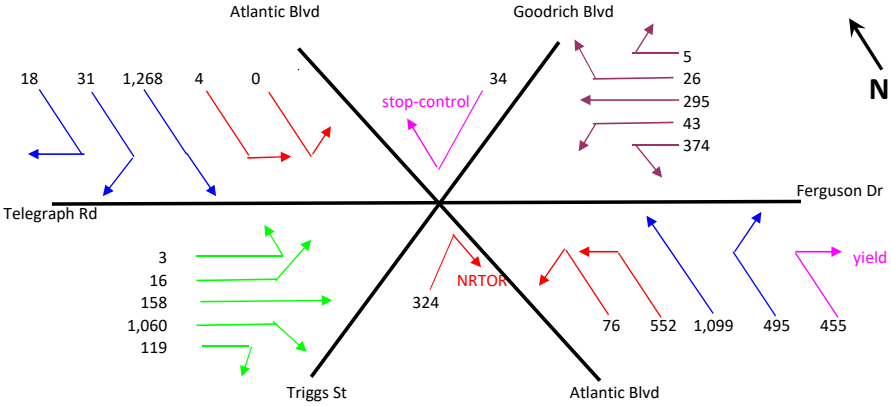
Intersection V/C: $\frac{1,246}{1,375} =$ **0.906**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.836** **Intersection LOS:** **D**

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project with Full Mitigation Conditions - PM Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{76 + 552}{2} = 314$ or

Southbound Left: $\frac{4 + 0}{1} = 4$ or

Northbound Right: 324

Critical Volume #1 (CV1): **324**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{1,099 + 495}{3} = 531$ or

Southbound Through + Right $\frac{1,268 + 31 + 18}{3} = 439$

Critical Volume #2 (CV2): **531**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{374 + 43}{1} = 417$ or

Westbound Through + Right: $\frac{295 + 26 + 5}{2} = 163$ or

Westbound Right: 26 + 5 = 31

Critical Volume #3 (CV3): **417**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{3 + 16 + 158}{1} = 177$ or

Eastbound Through: $\frac{1,060}{3} = 353.3$ or

Eastbound Right: 119

Critical Volume #4 (CV4): **353**

Critical Volume: 324 + 531 + 417 + 353 = **1,626**

Intersection V/C: $\frac{1,626}{1,375} = \mathbf{1.182}$

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **1.112** **Intersection LOS:** **F**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	263	0.000	N/S 1:	0.431
Southbound	Through	2.00	3,200	1,504	0.552 *	N/S 2:	0.573 *
	Left	1.00	1,600	221	0.138	E/W 1:	0.100
	Right	0.00	1,600	266	0.166 *	E/W 2:	0.207 *
Westbound	Through	2.00	1,600	128	0.122		
	Left	0.00	1,600	67	0.042	V/C Ratio:	0.780
	Right	0.00	0	81	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	857	0.293	ITS:	-0.070
	Left	1.00	1,600	34	0.021 *		
	Right	0.00	0	9	0.000	ICU:	0.810
Eastbound	Through	2.00	1,600	18	0.058		
	Left	0.00	1,600	66	0.041 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	219	0.000	N/S 1:	0.577 *
Southbound	Through	2.00	3,200	1,590	0.565	N/S 2:	0.571
	Left	1.00	1,600	159	0.099 *	E/W 1:	0.353 *
	Right	0.00	1,600	178	0.111	E/W 2:	0.294
Westbound	Through	2.00	1,600	29	0.056		
	Left	0.00	1,600	60	0.038 *	V/C Ratio:	0.930
	Right	0.00	0	45	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,484	0.478 *	ITS:	-0.070
	Left	1.00	1,600	9	0.006		
	Right	0.00	0	29	0.000	ICU:	0.960
Eastbound	Through	2.00	1,600	182	0.315 *		
	Left	0.00	1,600	293	0.183	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	15	0.000	N/S 1:	0.258
Southbound	Through	3.00	4,800	1,673	0.352 *	N/S 2:	0.408 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.025 *
	Right	0.50	800	0	0.000	E/W 2:	0.003
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.433
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,237	0.258	ITS:	-0.070
	Left	1.00	1,600	90	0.056 *		
	Right	0.00	0	40	0.000	ICU:	0.463
Eastbound	Through	1.00	1,600	0	0.025 *		
	Left	1.00	1,600	5	0.003	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	6	0.000	N/S 1:	0.345 *
Southbound	Through	3.00	4,800	1,517	0.317	N/S 2:	0.331
	Left	1.00	1,600	0	0.000 *	E/W 1:	0.050 *
	Right	0.50	800	0	0.000	E/W 2:	0.004
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.395
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,658	0.345 *	ITS:	-0.070
	Left	1.00	1,600	23	0.014		
	Right	0.00	0	80	0.000	ICU:	0.425
Eastbound	Through	1.00	1,600	0	0.050 *		
	Left	1.00	1,600	6	0.004	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	334	0.066	N/S 1:	0.334 *
Southbound	Through	2.00	3,200	957	0.299	N/S 2:	0.327
	Left	1.00	1,600	217	0.136 *	E/W 1:	0.194
	Right	0.00	0	185	0.000	E/W 2:	0.459 *
Westbound	Through	3.00	4,800	1,334	0.316 *		
	Left	1.00	1,600	60	0.038	V/C Ratio:	0.793
	Right	0.00	0	20	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	615	0.198 *	ITS:	-0.070
	Left	1.00	1,600	44	0.028		
	Right	0.00	0	36	0.000	ICU:	0.823
Eastbound	Through	3.00	4,800	712	0.156		
	Left	1.00	1,600	228	0.143 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	349	0.048	N/S 1:	0.547 *
Southbound	Through	2.00	3,200	934	0.292	N/S 2:	0.310
	Left	1.00	1,600	347	0.217 *	E/W 1:	0.308
	Right	0.00	0	218	0.000	E/W 2:	0.403 *
Westbound	Through	3.00	4,800	896	0.232 *		
	Left	1.00	1,600	56	0.035	V/C Ratio:	0.950
	Right	0.00	0	70	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	985	0.330 *	ITS:	-0.070
	Left	1.00	1,600	28	0.018		
	Right	0.00	0	40	0.000	ICU:	0.980
Eastbound	Through	3.00	4,800	1,271	0.273		
	Left	1.00	1,600	273	0.171 *	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.370 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.306 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	518	0.162		
	Left	1.00	1,600	269	0.168 *	V/C Ratio:	0.676
	Right	1.46	2,329	775	0.249	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.54	3,664	1,355	0.370 *		
	Right	3.00	4,800	1,510	0.000	ICU:	0.706
Eastbound	Through	2.00	3,200	440	0.138 *		
	Left	0.00	0	0	0.000	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.423 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.651 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	996	0.311		
	Left	1.00	1,600	682	0.426 *	V/C Ratio:	1.074
	Right	1.29	2,067	786	0.167	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.71	3,900	1,648	0.423 *		
	Right	3.00	4,800	2,331	0.063	ICU:	1.104
Eastbound	Through	2.00	3,200	721	0.225 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	71	0.000	N/S 1:	0.155 *
Southbound	Through	1.00	1,600	69	0.048 *	N/S 2:	0.000
	Left	0.00	1,600	7	0.004	E/W 1:	0.254
	Right	0.00	0	9	0.000	E/W 2:	0.347 *
Westbound	Through	2.00	3,200	468	0.149 *		
	Left	2.00	2,880	287	0.100	V/C Ratio:	0.502
	Right	0.00	1,600	22	0.014	Loss Time:	0.100
Northbound	Through	2.00	1,600	16	0.010	ITS:	-0.070
	Left	1.75	2,526	271	0.107 *		
	Right	0.00	0	67	0.000	ICU:	0.532
Eastbound	Through	3.00	4,800	674	0.154		
	Left	1.00	1,600	316	0.198 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	352	0.149	N/S 1:	0.304 *
Southbound	Through	1.00	1,600	279	0.188 *	N/S 2:	0.000
	Left	0.00	1,600	22	0.014	E/W 1:	0.422
	Right	0.00	0	7	0.000	E/W 2:	0.436 *
Westbound	Through	2.00	3,200	930	0.293 *		
	Left	2.00	2,880	455	0.158	V/C Ratio:	0.740
	Right	0.00	1,600	46	0.029	Loss Time:	0.100
Northbound	Through	2.00	1,600	11	0.007	ITS:	-0.070
	Left	1.66	2,390	278	0.116 *		
	Right	0.00	0	124	0.000	ICU:	0.770
Eastbound	Through	3.00	4,800	1,145	0.264		
	Left	1.00	1,600	228	0.143 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.98	3,173	78	0.000	N/S 1:	0.027 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.02	1,464	40	0.027 *	E/W 1:	0.126
	Right	1.00	1,600	86	0.026	E/W 2:	0.244 *
Westbound	Through	3.00	4,800	837	0.174 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.271
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.301
Eastbound	Through	2.00	3,200	404	0.126		
	Left	2.00	2,880	203	0.070 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	471	0.070	N/S 1:	0.141 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.070
	Left	1.00	1,600	225	0.141 *	E/W 1:	0.231
	Right	1.00	1,600	247	0.014	E/W 2:	0.320 *
Westbound	Through	3.00	4,800	794	0.165 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.461
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.491
Eastbound	Through	2.00	3,200	738	0.231		
	Left	2.00	2,880	445	0.155 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	27	0.000	N/S 1:	0.022 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	1.00	1,600	35	0.022 *	E/W 1:	0.074
	Right	0.00	0	115	0.000	E/W 2:	0.260 *
Westbound	Through	3.00	4,800	901	0.212 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.282
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.312
Eastbound	Through	3.00	4,800	355	0.074		
	Left	1.00	1,600	76	0.048 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	164	0.077	N/S 1:	0.153 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.077
	Left	1.00	1,600	244	0.153 *	E/W 1:	0.189
	Right	0.00	0	115	0.000	E/W 2:	0.256 *
Westbound	Through	3.00	4,800	865	0.204 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.409
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.439
Eastbound	Through	3.00	4,800	905	0.189		
	Left	1.00	1,600	83	0.052 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.48	763	47	0.041	N/S 1:	0.068 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.041
	Left	1.52	2,193	150	0.068 *	E/W 1:	0.065
	Right	0.00	0	214	0.000	E/W 2:	0.285 *
Westbound	Through	3.00	4,800	950	0.243 *		
	Left	0.00	1,600	3	0.002	V/C Ratio:	0.353
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.383
Eastbound	Through	3.00	4,800	300	0.063		
	Left	1.00	1,600	67	0.042 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.43	692	96	0.106	N/S 1:	0.154 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.106
	Left	1.57	2,257	348	0.154 *	E/W 1:	0.220
	Right	0.00	0	165	0.000	E/W 2:	0.273 *
Westbound	Through	3.00	4,800	829	0.207 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.427
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	0.00	0	0	0.000	ICU:	0.457
Eastbound	Through	3.00	4,800	1,057	0.220		
	Left	1.00	1,600	106	0.066 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	12	0.000	N/S 1:	0.156 *
Southbound	Through	1.00	1,600	15	0.017 *	N/S 2:	0.000
	Left	1.00	1,600	18	0.011	E/W 1:	0.295 *
	Right	0.00	0	10	0.000	E/W 2:	0.197
Westbound	Through	3.00	4,800	937	0.197		
	Left	2.00	2,880	584	0.203 *	V/C Ratio:	0.451
	Right	1.00	1,600	350	0.016	Loss Time:	0.100
Northbound	Through	1.00	1,600	5	0.139 *	ITS:	-0.070
	Left	0.00	1,600	217	0.136		
	Right	0.00	0	37	0.000	ICU:	0.481
Eastbound	Through	3.00	4,800	404	0.092 *		
	Left	1.00	1,600	0	0.000	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	18	0.000	N/S 1:	0.192 *
Southbound	Through	1.00	1,600	79	0.061 *	N/S 2:	0.000
	Left	1.00	1,600	34	0.021	E/W 1:	0.509 *
	Right	0.00	0	56	0.000	E/W 2:	0.194
Westbound	Through	3.00	4,800	766	0.171		
	Left	2.00	2,880	705	0.245 *	V/C Ratio:	0.701
	Right	1.00	1,600	247	0.000	Loss Time:	0.100
Northbound	Through	1.00	1,600	13	0.131 *	ITS:	-0.070
	Left	0.00	1,600	196	0.123		
	Right	0.00	0	66	0.000	ICU:	0.731
Eastbound	Through	3.00	4,800	1,202	0.264 *		
	Left	1.00	1,600	36	0.023	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	610	0.285	N/S 1:	0.428 *
Southbound	Through	2.00	3,200	901	0.282	N/S 2:	0.338
	Left	1.00	1,600	35	0.022 *	E/W 1:	0.227
	Right	0.00	0	58	0.000	E/W 2:	0.340 *
Westbound	Through	2.00	3,200	719	0.243 *		
	Left	1.00	1,600	293	0.183	V/C Ratio:	0.768
	Right	1.00	1,600	174	0.017	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,300	0.406 *	ITS:	-0.070
	Left	2.00	2,880	153	0.053		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.798
Eastbound	Through	2.00	3,200	142	0.044		
	Left	2.00	2,880	278	0.097 *	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	661	0.253	N/S 1:	0.454 *
Southbound	Through	2.00	3,200	809	0.253	N/S 2:	0.321
	Left	1.00	1,600	74	0.046 *	E/W 1:	0.339
	Right	0.00	0	52	0.000	E/W 2:	0.371 *
Westbound	Through	2.00	3,200	623	0.211 *		
	Left	1.00	1,600	246	0.154	V/C Ratio:	0.825
	Right	1.00	1,600	293	0.106	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,307	0.408 *	ITS:	-0.070
	Left	2.00	2,880	195	0.068		
	Right [1]	1.00	1,600	0	0.000	ICU:	0.855
Eastbound	Through	2.00	3,200	591	0.185		
	Left	2.00	2,880	461	0.160 *	LOS:	D

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	78	0.041	N/S 1:	0.431
Southbound	Through	2.00	3,200	1,448	0.453 *	N/S 2:	0.457 *
	Left	1.00	1,600	82	0.051	E/W 1:	0.319 *
	Right	1.00	1,600	247	0.129	E/W 2:	0.277
Westbound	Through	2.00	3,200	834	0.261		
	Left	2.00	2,880	686	0.238 *	V/C Ratio:	0.776
	Right	1.00	1,600	500	0.074	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,210	0.380	ITS:	-0.070
	Left	0.00	1,600	7	0.004 *		
	Right [1]	1.00	1,600	130	0.081 *	ICU:	0.806
Eastbound	Through	2.00	3,200	211	0.066		
	Left	1.00	1,600	25	0.016	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	69	0.031	N/S 1:	0.394 *
Southbound	Through	2.00	3,200	1,255	0.392 *	N/S 2:	0.394
	Left	1.00	1,600	115	0.072 *	E/W 1:	0.388 *
	Right	1.00	1,600	386	0.205	E/W 2:	0.229
Westbound	Through	2.00	3,200	442	0.138		
	Left	2.00	2,880	370	0.128 *	V/C Ratio:	0.782
	Right	1.00	1,600	483	0.173	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,026	0.322 *	ITS:	-0.070
	Left	0.00	1,600	3	0.002 *		
	Right [1]	1.00	1,600	290	0.181	ICU:	0.812
Eastbound	Through	2.00	3,200	832	0.260 *		
	Left	1.00	1,600	38	0.024	LOS:	D

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.056
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.278 *
	Left	0.00	0	0	0.000	E/W 1:	0.640 *
	Right	0.00	0	0	0.000	E/W 2:	0.362
Westbound	Through	2.00	3,200	1,158	0.362		
	Left	1.00	1,600	622	0.389 *	V/C Ratio:	0.918
	Right	0.03	48	12	0.056	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.97	2,837	788	0.278 *		
	Right	0.00	0	201	0.000	ICU:	0.948
Eastbound	Through	2.00	3,200	602	0.251 *		
	Left	0.00	0	0	0.000	LOS:	E

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.019
Southbound	Through	0.00	0	0	0.000 *	N/S 2:	0.214 *
	Left	0.00	0	0	0.000	E/W 1:	0.794 *
	Right	0.00	0	0	0.000	E/W 2:	0.216
Westbound	Through	2.00	3,200	692	0.216		
	Left	1.00	1,600	556	0.348 *	V/C Ratio:	1.008
	Right	0.11	182	35	0.019	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	1.89	2,717	582	0.214 *		
	Right	0.00	0	314	0.000	ICU:	1.038
Eastbound	Through	2.00	3,200	1,112	0.446 *		
	Left	0.00	0	0	0.000	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.455
Southbound	Through	1.00	1,600	1,050	0.656 *	N/S 2:	0.656 *
	Left	2.00	2,880	780	0.271	E/W 1:	0.000
	Right	3.00	4,800	1,267	0.129 *	E/W 2:	0.129 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.785
	Right	0.00	0	4	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	879	0.184	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.815
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.702
Southbound	Through	1.00	1,600	1,809	1.131 *	N/S 2:	1.131 *
	Left	2.00	2,880	1,294	0.449	E/W 1:	0.000
	Right	3.00	4,800	1,199	0.025 *	E/W 2:	0.025 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	1.156
	Right	0.00	0	28	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,185	0.253	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	1.186
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	13	0.000	N/S 1:	0.231 *
Southbound	Through	2.00	3,200	534	0.171	N/S 2:	0.174
	Left	2.00	2,880	239	0.083 *	E/W 1:	0.203 *
	Right	1.96	3,139	568	0.139	E/W 2:	0.000
Westbound	Through	0.04	61	11	0.181 *		
	Left	1.00	1,600	283	0.177	V/C Ratio:	0.434
	Right	0.00	0	37	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	674	0.148 *	ITS:	-0.070
	Left	1.00	1,600	4	0.003		
	Right	0.00	0	3	0.000	ICU:	0.464
Eastbound	Through	2.00	3,200	63	0.022 *		
	Left	0.00	1,600	3	0.002	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	20	0.000	N/S 1:	0.315 *
Southbound	Through	2.00	3,200	949	0.303	N/S 2:	0.305
	Left	2.00	2,880	366	0.127 *	E/W 1:	0.128 *
	Right	1.91	3,058	324	0.042	E/W 2:	0.000
Westbound	Through	0.09	142	15	0.106 *		
	Left	1.00	1,600	113	0.071	V/C Ratio:	0.443
	Right	0.00	0	38	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	863	0.188 *	ITS:	-0.070
	Left	1.00	1,600	3	0.002		
	Right	0.00	0	19	0.000	ICU:	0.473
Eastbound	Through	2.00	3,200	32	0.022 *		
	Left	0.00	1,600	19	0.012	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	168	0.076	N/S 1:	0.175
Southbound	Through	2.00	3,200	772	0.241 *	N/S 2:	0.274 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.175
	Right	0.00	0	39	0.000	E/W 2:	0.201 *
Westbound	Through	3.00	4,800	647	0.143 *		
	Left	1.00	1,600	55	0.034	V/C Ratio:	0.475
	Right	0.00	0	40	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	712	0.157	ITS:	-0.070
	Left	1.00	1,600	52	0.033 *		
	Right	0.00	0	79	0.000	ICU:	0.505
Eastbound	Through	3.00	4,800	599	0.141		
	Left	1.00	1,600	93	0.058 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	206	0.100	N/S 1:	0.229
Southbound	Through	2.00	3,200	1,344	0.420 *	N/S 2:	0.481 *
	Left	1.00	1,600	28	0.018	E/W 1:	0.218
	Right	0.00	0	62	0.000	E/W 2:	0.283 *
Westbound	Through	3.00	4,800	1,025	0.226 *		
	Left	1.00	1,600	90	0.056	V/C Ratio:	0.764
	Right	0.00	0	56	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	956	0.211	ITS:	-0.070
	Left	1.00	1,600	98	0.061 *		
	Right	0.00	0	64	0.000	ICU:	0.794
Eastbound	Through	3.00	4,800	712	0.162		
	Left	1.00	1,600	91	0.057 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	25	0.000	N/S 1:	0.146
Southbound	Through	3.00	4,800	618	0.134 *	N/S 2:	0.187 *
	Left	1.00	1,600	46	0.029	E/W 1:	0.134
	Right	0.00	0	25	0.000	E/W 2:	0.173 *
Westbound	Through	3.00	4,800	738	0.159 *		
	Left	1.00	1,600	42	0.026	V/C Ratio:	0.360
	Right	0.00	0	22	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	538	0.117	ITS:	-0.070
	Left	1.00	1,600	85	0.053 *		
	Right	0.00	0	87	0.000	ICU:	0.390
Eastbound	Through	3.00	4,800	432	0.108		
	Left	1.00	1,600	22	0.014 *	LOS:	A

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	36	0.000	N/S 1:	0.214
Southbound	Through	3.00	4,800	748	0.163 *	N/S 2:	0.236 *
	Left	1.00	1,600	64	0.040	E/W 1:	0.225 *
	Right	0.00	0	37	0.000	E/W 2:	0.213
Westbound	Through	3.00	4,800	858	0.186		
	Left	1.00	1,600	34	0.021 *	V/C Ratio:	0.461
	Right	0.00	0	33	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	803	0.174	ITS:	-0.070
	Left	1.00	1,600	117	0.073 *		
	Right	0.00	0	104	0.000	ICU:	0.491
Eastbound	Through	3.00	4,800	873	0.204 *		
	Left	1.00	1,600	43	0.027	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.324 *
Southbound	Through	3.00	4,800	1,452	0.303	N/S 2:	0.303
	Left	1.00	1,600	121	0.076 *	E/W 1:	0.078
	Right	0.00	0	0	0.000	E/W 2:	0.294 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.618
	Right	1.00	1,600	140	0.088	Loss Time:	0.100
Northbound	Through	2.00	3,200	794	0.248 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	125	0.078	ICU:	0.648
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	847	0.294 *	LOS:	B

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.688 *
Southbound	Through	3.00	4,800	1,258	0.262	N/S 2:	0.262
	Left	1.00	1,600	327	0.204 *	E/W 1:	0.020
	Right	0.00	0	0	0.000	E/W 2:	0.107 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.795
	Right	1.00	1,600	358	0.224	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,550	0.484 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	32	0.020	ICU:	0.825
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	307	0.107 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	2.00	3,200	921	0.148	N/S 1:	0.298 *
Southbound	Through	3.00	4,800	835	0.174	N/S 2:	0.231
	Left	1.00	1,600	75	0.047 *	E/W 1:	0.394 *
	Right	2.00	3,200	302	0.071	E/W 2:	0.000
Westbound	Through	1.00	1,600	328	0.205 *		
	Left	1.00	1,600	168	0.105	V/C Ratio:	0.692
	Right	0.00	0	352	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,653	0.251 *	ITS:	-0.070
	Left	1.00	1,600	91	0.057		
	Right	0.00	0	142	0.000	ICU:	0.722
Eastbound	Through	3.00	4,800	766	0.189 *		
	Left	1.00	1,600	223	0.139	LOS:	C

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	362	0.000	N/S 1:	0.272
Southbound	Through	4.00	6,400	1,580	0.247 *	N/S 2:	0.278 *
	Left	1.00	1,600	63	0.039	E/W 1:	0.517 *
	Right	2.00	3,200	577	0.161	E/W 2:	0.000
Westbound	Through	1.00	1,600	235	0.147		
	Left	1.00	1,600	335	0.209 *	V/C Ratio:	0.795
	Right	0.00	0	254	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,607	0.233	ITS:	-0.070
	Left	1.00	1,600	49	0.031 *		
	Right	0.00	1,600	492	0.308 *	ICU:	0.825
Eastbound	Through	2.62	2,594	676	0.261		
	Left	1.38	1,986	575	0.290	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

WEEKDAY A.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	909	0.456	N/S 1:	0.582 *
Southbound	Through	2.00	3,200	1,037	0.324	N/S 2:	0.509
	Left	1.00	1,600	342	0.214 *	E/W 1:	0.226
	Right	1.00	1,600	423	0.158 *	E/W 2:	0.271 *
Westbound	Through	2.00	3,200	247	0.077		
	Left	1.00	1,600	203	0.127	V/C Ratio:	0.853
	Right	1.00	1,600	114	0.008	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,177	0.368 *	ITS:	-0.070
	Left	1.00	1,600	85	0.053		
	Right	0.00	0	34	0.000	ICU:	0.883
Eastbound	Through	2.00	3,200	284	0.099		
	Left	1.00	1,600	180	0.113 *	LOS:	D

WEEKDAY P.M. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	366	0.068	N/S 1:	0.554 *
Southbound	Through	2.00	3,200	1,345	0.420	N/S 2:	0.456
	Left	1.00	1,600	343	0.214 *	E/W 1:	0.421 *
	Right	1.00	1,600	199	0.017	E/W 2:	0.191
Westbound	Through	2.00	3,200	97	0.030		
	Left	1.00	1,600	75	0.047 *	V/C Ratio:	0.975
	Right	1.00	1,600	208	0.107	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,088	0.340 *	ITS:	-0.070
	Left	1.00	1,600	58	0.036		
	Right	0.00	0	119	0.000	ICU:	1.005
Eastbound	Through	2.00	3,200	1,077	0.374 *		
	Left	1.00	1,600	257	0.161	LOS:	F

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

1. Atlantic Blvd & Whittier Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	180	0.000		N/S 1:	0.444	*
Southbound	Through	2.00	3,200	845	0.320		N/S 2:	0.410	
	Left	1.00	1,600	318	0.199	*	E/W 1:	0.379	*
	Right	1.00	1,600	249	0.056		E/W 2:	0.359	
Westbound	Through	2.00	3,200	834	0.261				
	Left	1.00	1,600	182	0.114	*	V/C Ratio:	0.823	
	Right	0.00	0	138	0.000		Loss Time:	0.100	
Northbound	Through	2.00	3,200	645	0.245	*	ITS:	-0.070	
	Left	1.00	1,600	144	0.090				
	Right	1.00	1,600	130	0.036		ICU:	0.853	
Eastbound	Through	2.00	3,200	849	0.265	*			
	Left	1.00	1,600	157	0.098		LOS:	D	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

2. Atlantic Blvd & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	203	0.000		N/S 1:	0.288
Southbound	Through	2.00	3,200	1,034	0.387	*	N/S 2:	0.448 *
	Left	1.00	1,600	118	0.074		E/W 1:	0.394 *
	Right	0.00	0	95	0.000		E/W 2:	0.370
Westbound	Through	2.00	3,200	744	0.262			
	Left	1.00	1,600	151	0.094	*	V/C Ratio:	0.842
	Right	0.00	0	70	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	614	0.214		ITS:	-0.070
	Left	1.00	1,600	97	0.061	*		
	Right	0.00	0	154	0.000		ICU:	0.872
Eastbound	Through	2.00	3,200	805	0.300	*		
	Left	1.00	1,600	173	0.108		LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

3. Garfield Ave & Olympic Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

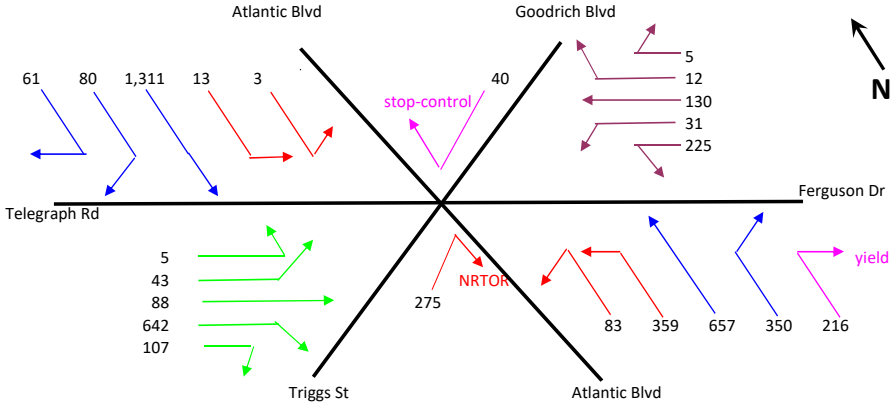
SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	61	0.000		N/S 1:	0.351
Southbound	Through	2.00	3,200	942	0.313	*	N/S 2:	0.422 *
	Left	1.00	1,600	68	0.043		E/W 1:	0.289 *
	Right	0.00	0	108	0.000		E/W 2:	0.221
Westbound	Through	2.00	3,200	406	0.161			
	Left	1.00	1,600	99	0.062	*	V/C Ratio:	0.711
	Right	0.00	0	82	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	905	0.308		ITS:	-0.070
	Left	1.00	1,600	174	0.109	*		
	Right	0.00	0	185	0.000		ICU:	0.741
Eastbound	Through	2.00	3,200	540	0.227	*		
	Left	1.00	1,600	96	0.060		LOS:	C

* Critical Movement

Intersection 4 - Atlantic Blvd @ Telegraph Rd/Ferguson Dr @ Goodrich Blvd/Triggs St

Future with Truck Traffic with Project with Full Mitigation Conditions - MD Peak Hour (Year 2025)



CV 1) Critical volume calculation for northbound left and southbound left traffic on Atlantic Blvd and northbound right traffic on Triggs St

Northbound Left: $\frac{83 + 359}{2} = 221$ or

Southbound Left: $\frac{13 + 3}{1} = 16$ or

Northbound Right: 275

Critical Volume #1 (CV1): **275**

CV 2) Critical volume calculation for northbound and southbound traffic on Atlantic Blvd

Northbound Through + Right: $\frac{657 + 350}{3} = 336$ or

Southbound Through + Right $\frac{1,311 + 80 + 61}{3} = 484$

Critical Volume #2 (CV2): **484**

CV 3) Critical volume calculation for westbound traffic on Ferguson Dr

Westbound Lefts: $\frac{225 + 31}{1} = 256$ or

Westbound Through + Right: $\frac{130 + 12 + 5}{2} = 74$ or

Westbound Right: 12 + 5 = 17

Critical Volume #3 (CV3): **256**

CV 4) Critical volume calculation for eastbound traffic on Telegraph Rd

Eastbound Lefts: $\frac{5 + 43 + 88}{1} = 136$ or

Eastbound Through: $\frac{642}{3} = 214$ or

Eastbound Right: 107

Critical Volume #4 (CV4): **214**

Critical Volume: 275 + 484 + 256 + 214 = **1,229**

Intersection V/C: $\frac{1,229}{1,375} = $ **0.894**

ATSAC/ATCS Credit: 0.07

Final intersection V/C: **0.824** **Intersection LOS:** **D**

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

5. Garfield Ave & Flotilla St

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	148	0.000	N/S 1:	0.377 *
Southbound	Through	2.00	3,200	1,032	0.369	N/S 2:	0.376
	Left	1.00	1,600	82	0.051 *	E/W 1:	0.102
	Right	0.00	1,600	104	0.065 *	E/W 2:	0.133 *
Westbound	Through	2.00	1,600	15	0.022		
	Left	0.00	1,600	20	0.013	V/C Ratio:	0.510
	Right	0.00	0	7	0.000	Loss Time:	0.100
Northbound	Through	2.00	3,200	1,036	0.326 *	ITS:	-0.070
	Left	1.00	1,600	11	0.007		
	Right	0.00	0	20	0.000	ICU:	0.540
Eastbound	Through	2.00	1,600	13	0.089		
	Left	0.00	1,600	109	0.068 *	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

9. Washington Blvd & Saybrook Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	2	0.000	N/S 1:	0.231
Southbound	Through	3.00	4,800	1,122	0.234 *	N/S 2:	0.247 *
	Left	1.00	1,600	0	0.000	E/W 1:	0.016 *
	Right	0.50	800	0	0.000	E/W 2:	0.002
Westbound	Through	0.00	0	0	0.000		
	Left	0.50	800	0	0.000 *	V/C Ratio:	0.263
	Right	0.00	0	0	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	1,109	0.231	ITS:	-0.070
	Left	1.00	1,600	20	0.013 *		
	Right	0.00	0	25	0.000	ICU:	0.293
Eastbound	Through	1.00	1,600	0	0.016 *		
	Left	1.00	1,600	3	0.002	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

10. Garfield Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	286	0.021		N/S 1:	0.343 *
Southbound	Through	2.00	3,200	562	0.176		N/S 2:	0.187
	Left	1.00	1,600	242	0.151	*	E/W 1:	0.200
	Right	0.00	0	221	0.000		E/W 2:	0.368 *
Westbound	Through	3.00	4,800	787	0.210	*		
	Left	1.00	1,600	47	0.029		V/C Ratio:	0.711
	Right	0.00	0	44	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	569	0.192	*	ITS:	-0.070
	Left	1.00	1,600	18	0.011			
	Right	0.00	0	25	0.000		ICU:	0.741
Eastbound	Through	3.00	4,800	798	0.171			
	Left	1.00	1,600	252	0.158	*	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

11. Atlantic Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	E		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000 *	N/S 1:	0.340 *
Southbound	Through	0.00	0	0	0.000	N/S 2:	0.000
	Left	0.00	0	0	0.000	E/W 1:	0.584 *
	Right	0.00	0	0	0.000	E/W 2:	0.000
Westbound	Through	2.00	3,200	692	0.216		
	Left	1.00	1,600	515	0.322 *	V/C Ratio:	0.924
	Right	2.00	3,200	1,213	0.218	Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	ITS:	-0.070
	Left	2.00	2,880	979	0.340 *		
	Right	3.00	4,800	1,668	0.008	ICU:	0.954
Eastbound	Through	2.00	3,200	837	0.262 *		
	Left	0.00	0	0	0.000	LOS:	E

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

12. I-5 NB Ramps/Camfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	231	0.037		N/S 1:	0.239 *
Southbound	Through	1.00	1,600	171	0.125	*	N/S 2:	0.000
	Left	0.00	1,600	29	0.018		E/W 1:	0.522 *
	Right	0.00	0	13	0.000		E/W 2:	0.458
Westbound	Through	2.00	3,200	768	0.244			
	Left	2.00	2,880	496	0.172	*	V/C Ratio:	0.761
	Right	0.00	1,600	116	0.073		Loss Time:	0.100
Northbound	Through	2.00	1,600	9	0.006		ITS:	-0.070
	Left	1.24	1,786	204	0.114	*		
	Right	0.00	0	72	0.000		ICU:	0.791
Eastbound	Through	3.00	4,800	1,606	0.350	*		
	Left	1.00	1,600	343	0.214		LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

14. Citadel Dr & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	W		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.81	2,894	425	0.001		N/S 1:	0.163 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.001
	Left	1.19	1,716	280	0.163	*	E/W 1:	0.214
	Right	1.00	1,600	490	0.143		E/W 2:	0.480 *
Westbound	Through	3.00	4,800	903	0.188	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.643
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.673
Eastbound	Through	2.00	3,200	685	0.214			
	Left	2.00	2,880	840	0.292	*	LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

15. Gaspar Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	322	0.155		N/S 1:	0.186 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.155
	Left	1.00	1,600	297	0.186	*	E/W 1:	0.168
	Right	0.00	0	213	0.000		E/W 2:	0.357 *
Westbound	Through	3.00	4,800	1,059	0.265	*		
	Left	0.00	0	0	0.000		V/C Ratio:	0.543
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.573
Eastbound	Through	3.00	4,800	804	0.168			
	Left	1.00	1,600	147	0.092	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

16. Tubeway Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.55	878	87	0.070		N/S 1:	0.110 *
Southbound	Through	0.00	0	0	0.000		N/S 2:	0.070
	Left	1.45	2,090	230	0.110	*	E/W 1:	0.195
	Right	0.00	0	187	0.000		E/W 2:	0.346 *
Westbound	Through	3.00	4,800	1,189	0.287	*		
	Left	0.00	1,600	1	0.001		V/C Ratio:	0.456
	Right	0.00	0	0	0.000		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000	*	ITS:	-0.070
	Left	0.00	0	0	0.000			
	Right	0.00	0	0	0.000		ICU:	0.486
Eastbound	Through	3.00	4,800	931	0.194			
	Left	1.00	1,600	94	0.059	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

17. I-5 NB Ramps/Commerce Casino & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	Y
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	17	0.000		N/S 1:	0.296	*
Southbound	Through	1.00	1,600	37	0.034	*	N/S 2:	0.000	
	Left	1.00	1,600	32	0.020		E/W 1:	0.435	*
	Right	0.00	0	57	0.000		E/W 2:	0.248	
Westbound	Through	3.00	4,800	1,024	0.225				
	Left	2.00	2,880	552	0.192	*	V/C Ratio:	0.731	
	Right	1.00	1,600	235	0.000		Loss Time:	0.100	
Northbound	Through	1.00	1,600	33	0.262	*	ITS:	-0.070	
	Left	0.00	1,600	386	0.241				
	Right	0.00	0	80	0.000		ICU:	0.761	
Eastbound	Through	3.00	4,800	1,087	0.243	*			
	Left	1.00	1,600	36	0.023		LOS:	C	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

18. Washington Blvd & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	612	0.227	*	N/S 1:	0.338
Southbound	Through	2.00	3,200	521	0.163		N/S 2:	0.392 *
	Left	1.00	1,600	70	0.044		E/W 1:	0.253
	Right	0.00	0	50	0.000		E/W 2:	0.372 *
Westbound	Through	2.00	3,200	642	0.216	*		
	Left	1.00	1,600	197	0.123		V/C Ratio:	0.764
	Right	1.00	1,600	207	0.068		Loss Time:	0.100
Northbound	Through	2.00	3,200	941	0.294		ITS:	-0.070
	Left	2.00	2,880	476	0.165	*		
	Right [1]	1.00	1,600	0	0.000		ICU:	0.794
Eastbound	Through	2.00	3,200	416	0.130			
	Left	2.00	2,880	449	0.156	*	LOS:	C

* Critical Movement [1] Free Right-Turn

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

19. Garfield Ave & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	0 %	ITS Percentage:	7%
Overlapping Right Turn:	N		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.00	1,600	147	0.092	N/S 1:	0.188
Southbound	Through	2.00	3,200	670	0.209 *	N/S 2:	0.277 *
	Left	1.00	1,600	34	0.021	E/W 1:	0.244
	Right	1.00	1,600	380	0.238 *	E/W 2:	0.247 *
Westbound	Through	2.00	3,200	598	0.187		
	Left	2.00	2,880	317	0.110	V/C Ratio:	0.524
	Right	1.00	1,600	357	0.113	Loss Time:	0.100
Northbound	Through	2.00	3,200	533	0.167	ITS:	-0.070
	Left	1.00	1,600	108	0.068 *		
	Right [1]	1.00	1,600	215	0.134	ICU:	0.554
Eastbound	Through	2.00	3,200	409	0.128		
	Left	1.00	1,600	15	0.009 *	LOS:	A

* Critical Movement [1] No Right-Turn on Red

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

20. I-5 NB Ramps & Telegraph Rd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	0	0.000		N/S 1:	0.062
Southbound	Through	0.00	0	0	0.000	*	N/S 2:	0.178 *
	Left	0.00	0	0	0.000		E/W 1:	0.468 *
	Right	0.00	0	0	0.000		E/W 2:	0.209
Westbound	Through	2.00	3,200	668	0.209			
	Left	1.00	1,600	316	0.198	*	V/C Ratio:	0.646
	Right	0.08	131	21	0.062		Loss Time:	0.100
Northbound	Through	0.00	0	0	0.000		ITS:	-0.070
	Left	1.92	2,762	493	0.178	*		
	Right	0.00	0	217	0.000		ICU:	0.676
Eastbound	Through	2.00	3,200	647	0.270	*		
	Left	0.00	0	0	0.000		LOS:	B

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

21. Atlantic Blvd & Eastern Ave

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.492
Southbound	Through	1.00	1,600	1,224	0.765 *	N/S 2:	0.765 *
	Left	2.00	2,880	800	0.278	E/W 1:	0.000
	Right	3.00	4,800	1,124	0.095 *	E/W 2:	0.095 *
Westbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000	V/C Ratio:	0.860
	Right	0.00	0	33	0.000	Loss Time:	0.100
Northbound	Through	3.00	4,800	996	0.214	ITS:	-0.070
	Left	0.00	0	0	0.000 *		
	Right	0.00	0	0	0.000	ICU:	0.890
Eastbound	Through	0.00	0	0	0.000		
	Left	0.00	0	0	0.000 *	LOS:	D

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

22. Eastern Ave & I-5 Ramps/Stevens Pl

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis		
	Right	0.00	0	25	0.000		N/S 1:	0.221	*
Southbound	Through	2.00	3,200	547	0.179		N/S 2:	0.182	
	Left	2.00	2,880	324	0.113	*	E/W 1:	0.222	*
	Right	1.98	3,165	642	0.147		E/W 2:	0.000	
Westbound	Through	0.02	35	7	0.203	*			
	Left	1.00	1,600	44	0.028		V/C Ratio:	0.443	
	Right	0.00	0	40	0.000		Loss Time:	0.100	
Northbound	Through	3.00	4,800	476	0.108	*	ITS:	-0.070	
	Left	1.00	1,600	5	0.003				
	Right	0.00	0	9	0.000		ICU:	0.473	
Eastbound	Through	2.00	3,200	44	0.019	*			
	Left	0.00	1,600	7	0.004		LOS:	A	

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

23. Atlantic Blvd & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	209	0.090		N/S 1:	0.208
Southbound	Through	2.00	3,200	898	0.281	*	N/S 2:	0.317 *
	Left	1.00	1,600	50	0.031		E/W 1:	0.161
	Right	0.00	0	65	0.000		E/W 2:	0.205 *
Westbound	Through	3.00	4,800	525	0.123	*		
	Left	1.00	1,600	89	0.056		V/C Ratio:	0.522
	Right	0.00	0	86	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	763	0.177		ITS:	-0.070
	Left	1.00	1,600	58	0.036	*		
	Right	0.00	0	54	0.000		ICU:	0.552
Eastbound	Through	3.00	4,800	452	0.105			
	Left	1.00	1,600	131	0.082	*	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

24. Eastern Ave & Washington Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	0.00	0	47	0.000		N/S 1:	0.115
Southbound	Through	3.00	4,800	439	0.101	*	N/S 2:	0.153 *
	Left	1.00	1,600	42	0.026		E/W 1:	0.148 *
	Right	0.00	0	38	0.000		E/W 2:	0.132
Westbound	Through	3.00	4,800	539	0.120			
	Left	1.00	1,600	42	0.026	*	V/C Ratio:	0.301
	Right	0.00	0	35	0.000		Loss Time:	0.100
Northbound	Through	3.00	4,800	393	0.089		ITS:	-0.070
	Left	1.00	1,600	83	0.052	*		
	Right	0.00	0	47	0.000		ICU:	0.331
Eastbound	Through	3.00	4,800	539	0.122	*		
	Left	1.00	1,600	19	0.012		LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

25. Washington Blvd & I-5 SB Ramps

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:			

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	0.00	0	0	0.000	N/S 1:	0.474 *
Southbound	Through	3.00	4,800	840	0.175	N/S 2:	0.175
	Left	1.00	1,600	358	0.224 *	E/W 1:	0.055
	Right	0.00	0	0	0.000	E/W 2:	0.288 *
Westbound	Through	0.00	0	0	0.000 *		
	Left	0.00	0	0	0.000	V/C Ratio:	0.762
	Right	1.00	1,600	177	0.111	Loss Time:	0.100
Northbound	Through	2.00	3,200	799	0.250 *	ITS:	-0.070
	Left	0.00	0	0	0.000		
	Right	1.00	1,600	88	0.055	ICU:	0.792
Eastbound	Through	0.00	0	0	0.000		
	Left	2.00	2,880	828	0.288 *	LOS:	C

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

26. Atlantic Blvd & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	Y
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C	ICU Analysis	
	Right	1.08	1,727	308	0.065	N/S 1:	0.281 *
Southbound	Through	3.92	6,273	1,119	0.178	N/S 2:	0.221
	Left	1.00	1,600	67	0.042 *	E/W 1:	0.227 *
	Right	2.00	3,200	218	0.047	E/W 2:	0.000
Westbound	Through	1.00	1,600	142	0.089 *		
	Left	1.00	1,600	107	0.067	V/C Ratio:	0.508
	Right	0.00	0	214	0.000	Loss Time:	0.100
Northbound	Through	5.00	8,000	1,699	0.239 *	ITS:	-0.070
	Left	1.00	1,600	68	0.043		
	Right	0.00	1,600	221	0.138 *	ICU:	0.538
Eastbound	Through	2.53	2,454	250	0.102		
	Left	1.47	2,111	239	0.113	LOS:	A

* Critical Movement

The Citadel and 10-Acre Project

Intersection Capacity Utilization Analysis

27. Garfield Ave & Bandini Blvd

Through Lane Capacity:	1600 vph	North/South Split Phase:	N
Left-Turn Lane Capacity:	1600 vph	E/W Split Phase:	N
Double-Left Penalty:	10 %	Loss Time % per Cycle:	10%
Right-Turn on Red:	50 %	ITS Percentage:	7%
Overlapping Right Turn:	S		

SATURDAY M.D. PEAK HOUR

Approach	Movement	Lanes	Capacity	Volume	V/C		ICU Analysis	
	Right	1.00	1,600	174	0.058		N/S 1:	0.420 *
Southbound	Through	2.00	3,200	664	0.208		N/S 2:	0.274
	Left	1.00	1,600	325	0.203	*	E/W 1:	0.135 *
	Right	1.00	1,600	211	0.030		E/W 2:	0.081
Westbound	Through	2.00	3,200	84	0.026			
	Left	1.00	1,600	87	0.054	*	V/C Ratio:	0.555
	Right	1.00	1,600	37	0.000		Loss Time:	0.100
Northbound	Through	2.00	3,200	694	0.217	*	ITS:	-0.070
	Left	1.00	1,600	106	0.066			
	Right	0.00	0	43	0.000		ICU:	0.585
Eastbound	Through	2.00	3,200	217	0.081	*		
	Left	1.00	1,600	81	0.051		LOS:	A

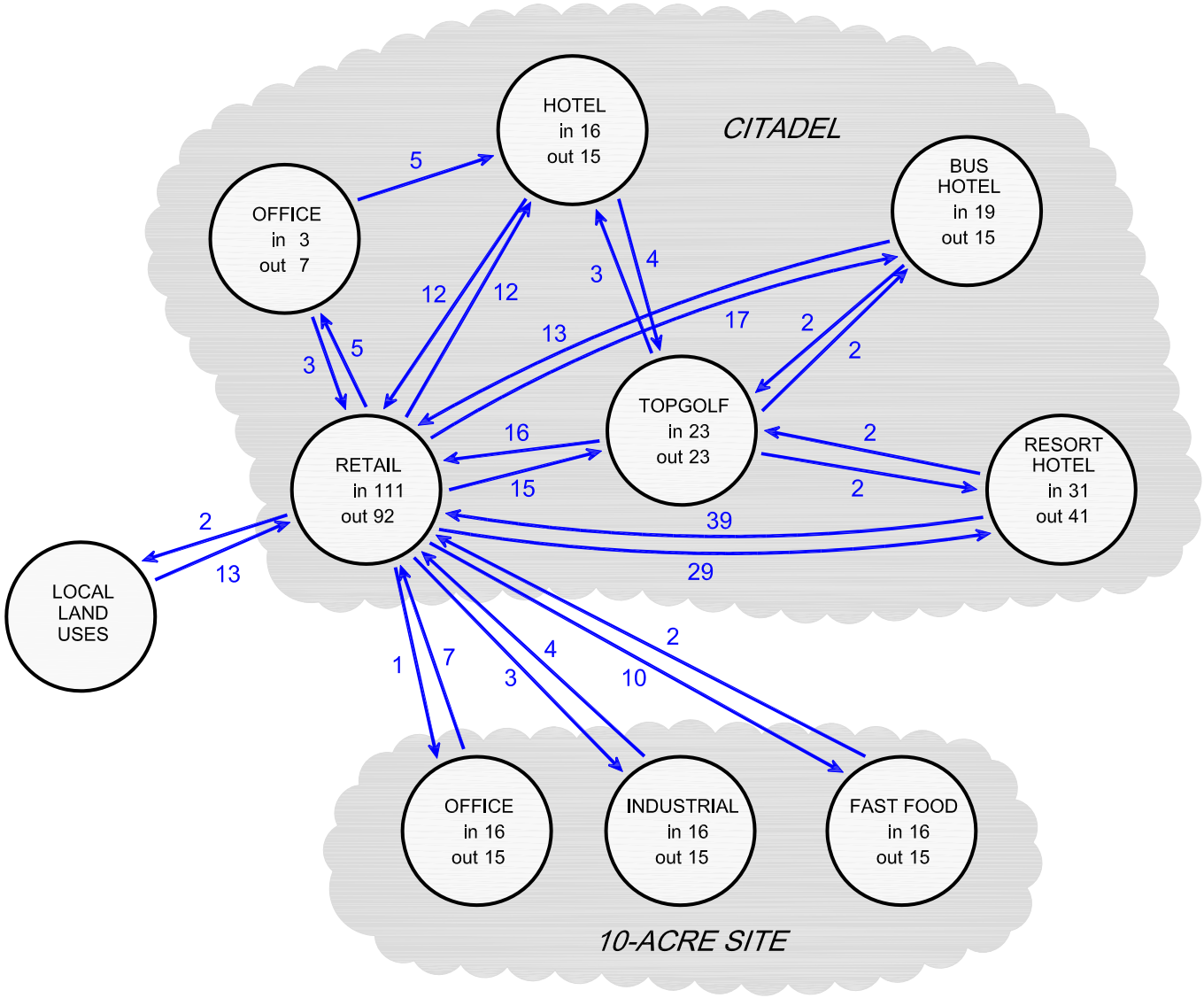
* Critical Movement

Appendix C

Internal Capture

LEGEND

↔ Direction of Capture



Refer to Institute of Transportation Engineers Trip General Handbook, Second Edition, 2004, Figure 7.4, page 99.

ALLOCATION OF INTERNAL CAPTURE TRIPS
WEEKDAY PM PEAK HOUR

APPENDIX
C

Appendix D

Signal Warrant Analysis

Citadel Expansion Project

Traffic Signal Warrant Analysis
Warrant 3, Peak Hour

13. TELEGRAPH ROAD & HOEFNER AVENUE

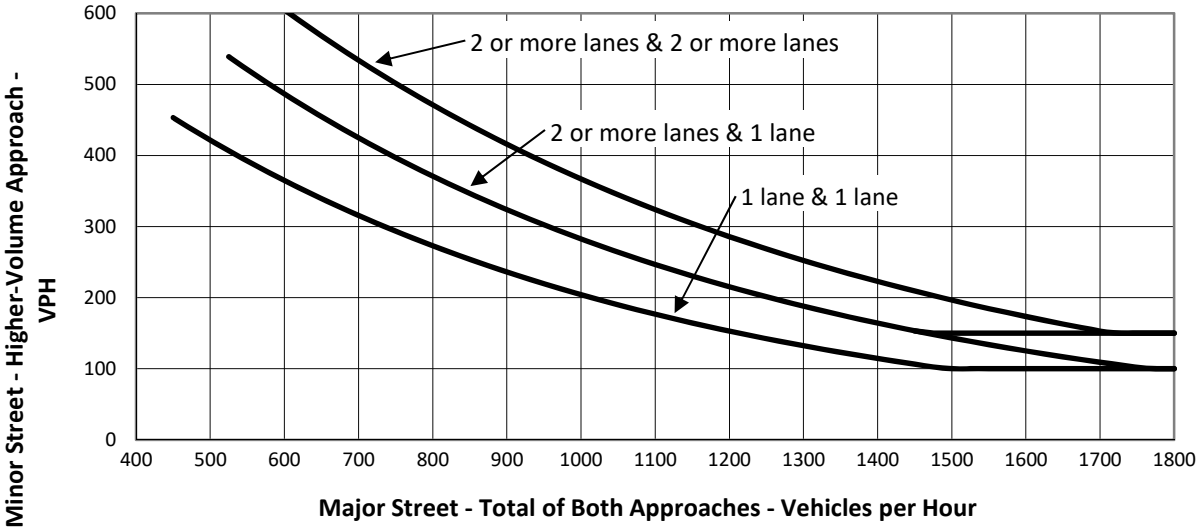
Major Street Name:	Telegraph Road	Vehicles per Hour (Peak Hour)	
Minor Street Name:	Hoefner Avenue	Major Street (Approach 1):	1,296
		Major Street (Approach 2):	1,775
Major Street Lanes:	2	[a] Major Street Left-Turns:	0
Minor Street Lanes:	1	Minor Street (Higher Volume):	179

[b] Urban/Rural: Urban

Vehicles per Hour (Peak Hour)

Major Street (Approach 1):	1,296	Minimum Major Street Volume:	510
Major Street (Approach 2):	1,775	Satisfied?	YES
Total Major Street Volume:	3,071		
		Minimum Minor Street Volume:	100
Major Street Left Turns:	0	Satisfied?	YES
Minor Street (Higher Volume):	179		
Total Minor Street Volume:	179	Warrant 3 Satisfied?	**YES**

Figure 4C-3. Warrant 3, Peak Hour [c]



[a] Major street left-turn volume is added to minor street volume if a protected left-turn signal phase is proposed.

[b] Setting to "Rural" reduces minimum test volumes to approximately 70% of "Urban" test volumes. This may be used when major street speed exceeds 40 mph or in an isolated community of less than 10,000 residents.

[c] From *California Manual on Uniform Traffic Control Devices, 2014 Edition;* Caltrans.

Citadel Expansion Project

Traffic Signal Warrant Analysis
Warrant 3, Peak Hour

28. BANDINI BOULEVARD & I-5 SOUTHBOUND RAMPS

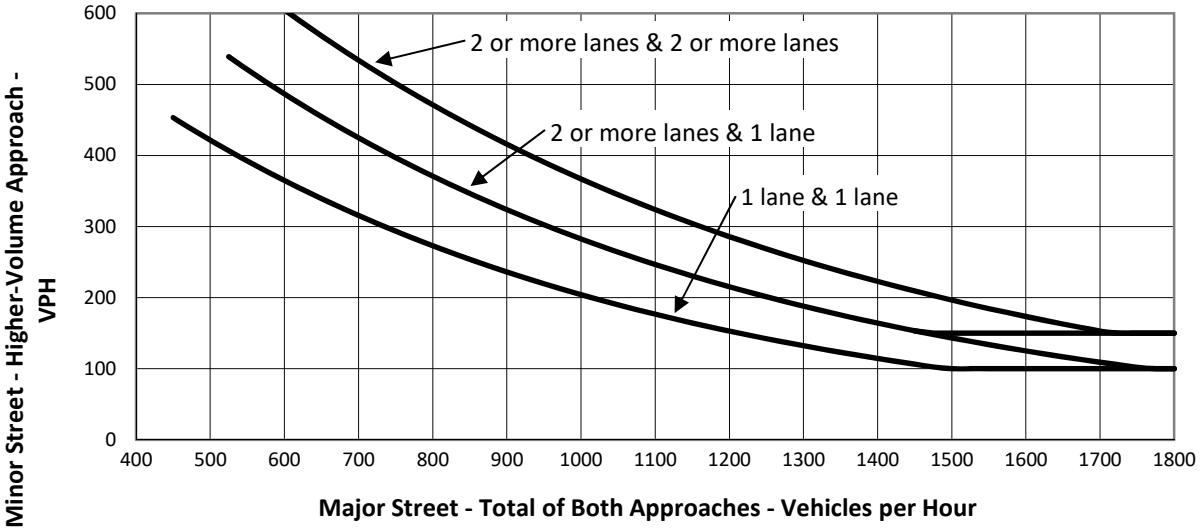
Major Street Name:	Bandini Boulevard	Vehicles per Hour (Peak Hour)	
Minor Street Name:	I-5 Southbound Ramps	Major Street (Approach 1):	1,315
		Major Street (Approach 2):	170
Major Street Lanes:	2	[a] Major Street Left-Turns:	0
Minor Street Lanes:	1	Minor Street (Higher Volume):	33

[b] Urban/Rural: Urban

Vehicles per Hour (Peak Hour)

Major Street (Approach 1):	1,315	Minimum Major Street Volume:	510
Major Street (Approach 2):	170	Satisfied?	YES
Total Major Street Volume:	1,485		
		Minimum Minor Street Volume:	146
Major Street Left Turns:	0	Satisfied?	NO
Minor Street (Higher Volume):	33		
Total Minor Street Volume:	33	Warrant 3 Satisfied?	**NO**

Figure 4C-3. Warrant 3, Peak Hour [c]



[a] Major street left-turn volume is added to minor street volume if a protected left-turn signal phase is proposed.

[b] Setting to "Rural" reduces minimum test volumes to approximately 70% of "Urban" test volumes. This may be used when major street speed exceeds 40 mph or in an isolated community of less than 10,000 residents.

[c] From *California Manual on Uniform Traffic Control Devices, 2014 Edition;* Caltrans.

Citadel Expansion Project

Traffic Signal Warrant Analysis
Warrant 3, Peak Hour

13. TELEGRAPH ROAD & HOEFNER AVENUE

Major Street Name: Telegraph Road
Minor Street Name: Hoefner Avenue

Major Street Lanes: 2
Minor Street Lanes: 1

[b] Urban/Rural: Urban

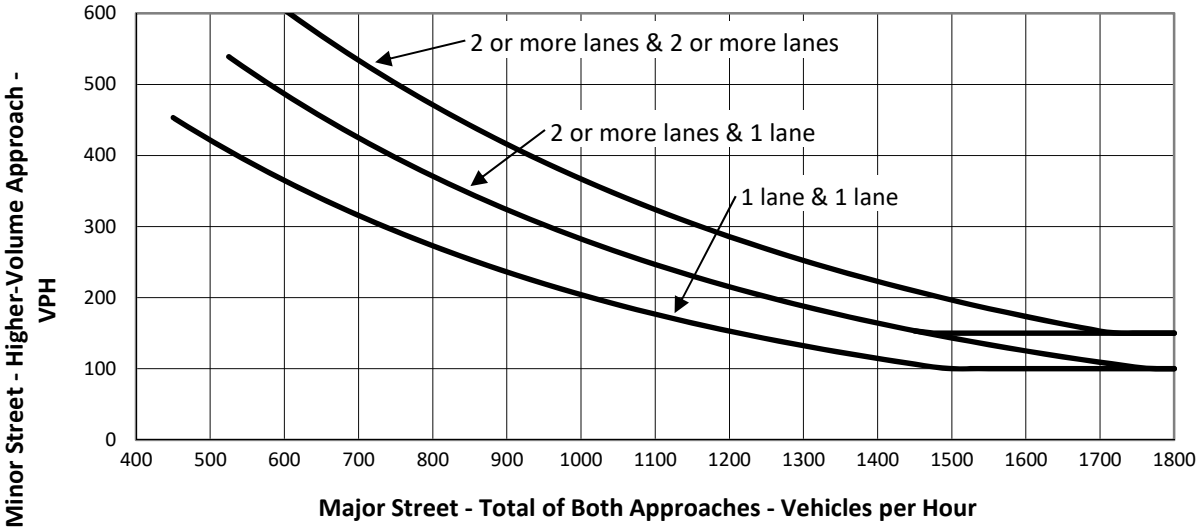
Vehicles per Hour (Peak Hour)	
Major Street (Approach 1):	1,357
Major Street (Approach 2):	1,869
[a] Major Street Left-Turns:	0
Minor Street (Higher Volume):	184

Vehicles per Hour (Peak Hour)

Major Street (Approach 1):	1,357
Major Street (Approach 2):	1,869
Total Major Street Volume:	3,226
Major Street Left Turns:	0
Minor Street (Higher Volume):	184
Total Minor Street Volume:	184

Minimum Major Street Volume:	510
Satisfied?	YES
Minimum Minor Street Volume:	100
Satisfied?	YES
Warrant 3 Satisfied?	**YES**

Figure 4C-3. Warrant 3, Peak Hour [c]



[a] Major street left-turn volume is added to minor street volume if a protected left-turn signal phase is proposed.

[b] Setting to "Rural" reduces minimum test volumes to approximately 70% of "Urban" test volumes. This may be used when major street speed exceeds 40 mph or in an isolated community of less than 10,000 residents.

[c] From *California Manual on Uniform Traffic Control Devices, 2014 Edition;* Caltrans.

Citadel Expansion Project

Traffic Signal Warrant Analysis
Warrant 3, Peak Hour

28. BANDINI BOULEVARD & I-5 SOUTHBOUND RAMPS

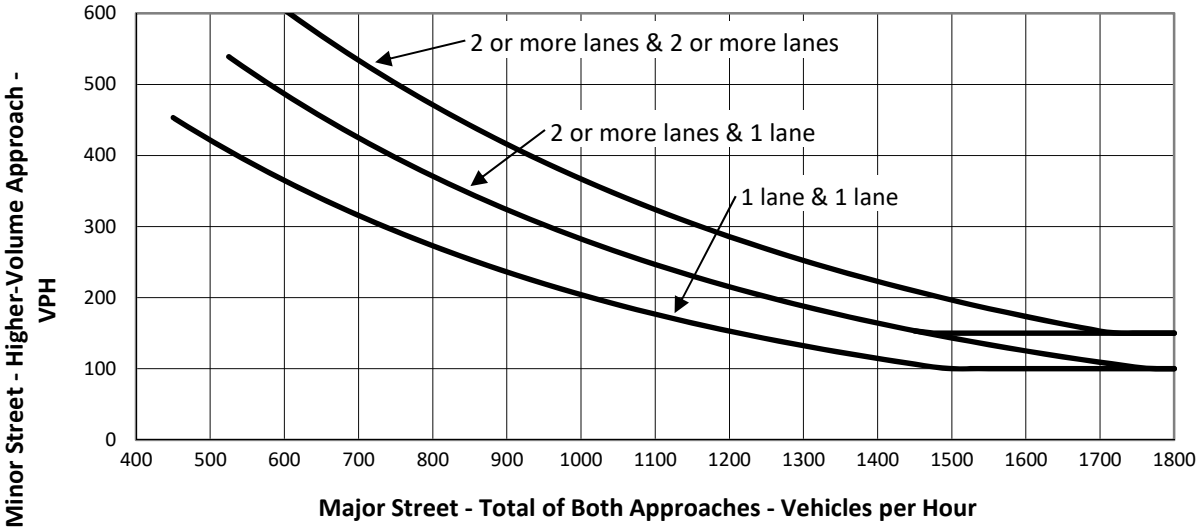
Major Street Name:	Bandini Boulevard	Vehicles per Hour (Peak Hour)	
Minor Street Name:	I-5 Southbound Ramps	Major Street (Approach 1):	1,466
		Major Street (Approach 2):	257
Major Street Lanes:	2	[a] Major Street Left-Turns:	0
Minor Street Lanes:	1	Minor Street (Higher Volume):	44

[b] Urban/Rural: Urban

Vehicles per Hour (Peak Hour)

Major Street (Approach 1):	1,466	Minimum Major Street Volume:	510
Major Street (Approach 2):	257	Satisfied?	YES
Total Major Street Volume:	1,723		
		Minimum Minor Street Volume:	106
Major Street Left Turns:	0	Satisfied?	NO
Minor Street (Higher Volume):	44		
Total Minor Street Volume:	44	Warrant 3 Satisfied?	**NO**

Figure 4C-3. Warrant 3, Peak Hour [c]



[a] Major street left-turn volume is added to minor street volume if a protected left-turn signal phase is proposed.

[b] Setting to "Rural" reduces minimum test volumes to approximately 70% of "Urban" test volumes. This may be used when major street speed exceeds 40 mph or in an isolated community of less than 10,000 residents.

[c] From *California Manual on Uniform Traffic Control Devices, 2014 Edition;* Caltrans.

Citadel Expansion Project

Traffic Signal Warrant Analysis
Warrant 3, Peak Hour

124. WASHINGTON BOULEVARD & 10-ACRE PARCEL/COSTCO DRIVEWAY

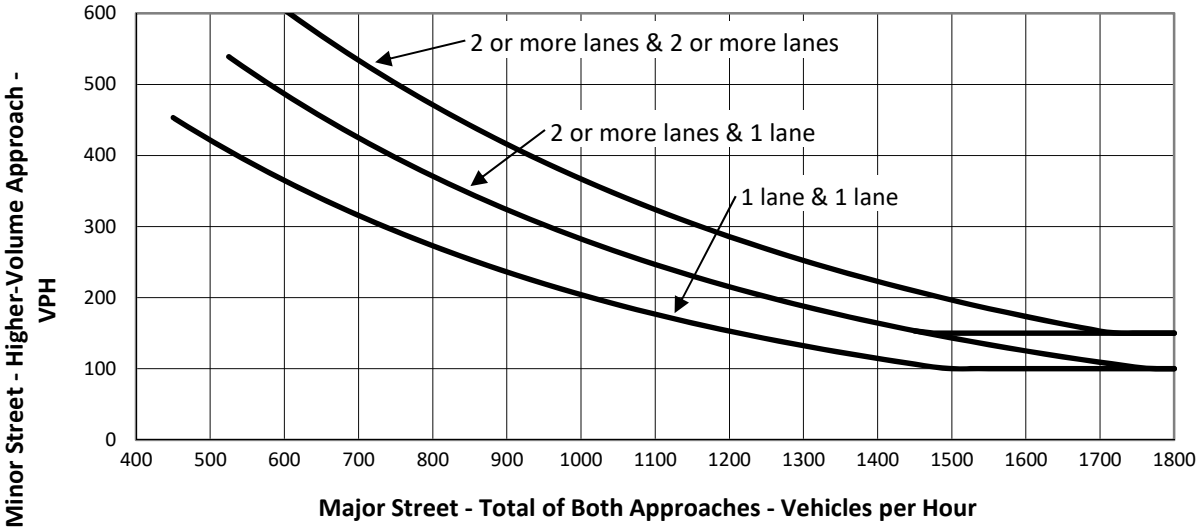
Major Street Name:	Washington Boulevard	Vehicles per Hour (Peak Hour)	
Minor Street Name:	10-Acre Parcel/Costco Driveway	Major Street (Approach 1):	1,113
		Major Street (Approach 2):	1,385
Major Street Lanes:	3	[a] Major Street Left-Turns:	0
Minor Street Lanes:	1	Minor Street (Higher Volume):	116

[b] Urban/Rural: Urban

Vehicles per Hour (Peak Hour)

Major Street (Approach 1):	1,113	Minimum Major Street Volume:	510
Major Street (Approach 2):	1,385	Satisfied?	YES
Total Major Street Volume:	2,498		
		Minimum Minor Street Volume:	100
Major Street Left Turns:	0	Satisfied?	YES
Minor Street (Higher Volume):	116		
Total Minor Street Volume:	116	Warrant 3 Satisfied?	**YES**

Figure 4C-3. Warrant 3, Peak Hour [c]



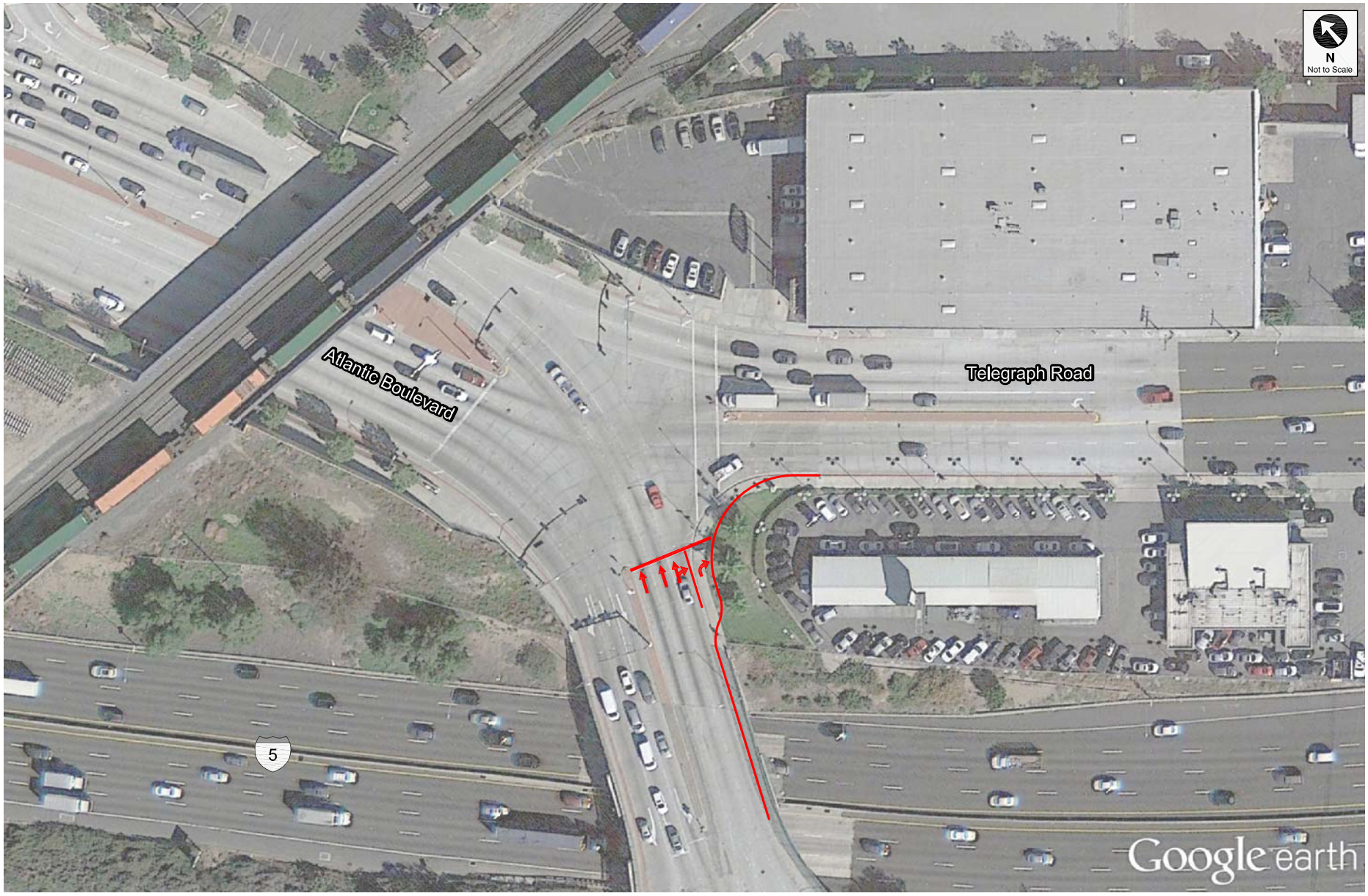
[a] Major street left-turn volume is added to minor street volume if a protected left-turn signal phase is proposed.

[b] Setting to "Rural" reduces minimum test volumes to approximately 70% of "Urban" test volumes. This may be used when major street speed exceeds 40 mph or in an isolated community of less than 10,000 residents.

[c] From *California Manual on Uniform Traffic Control Devices, 2014 Edition;* Caltrans.

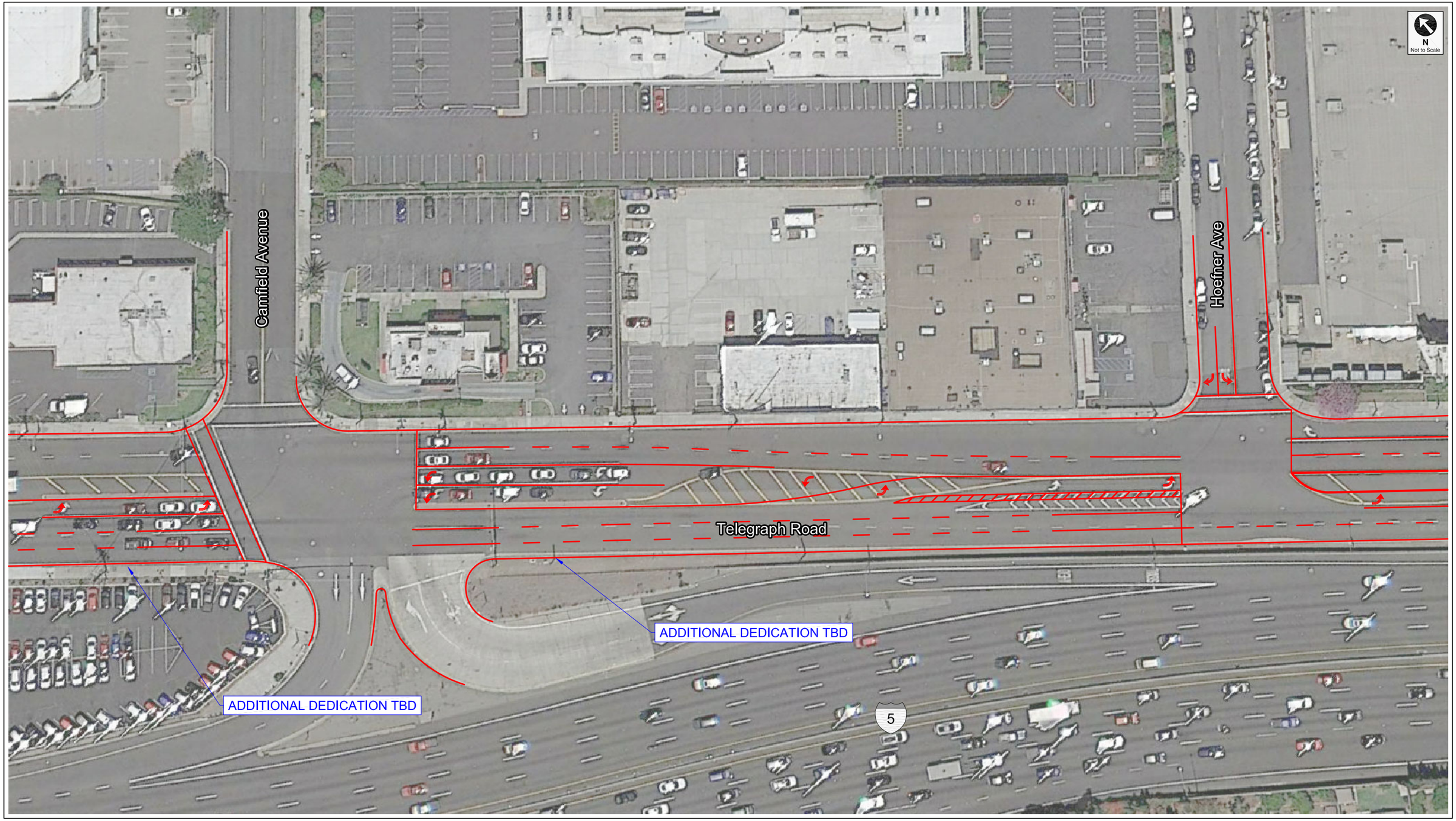
Appendix E

Potential Physical Improvement Measures



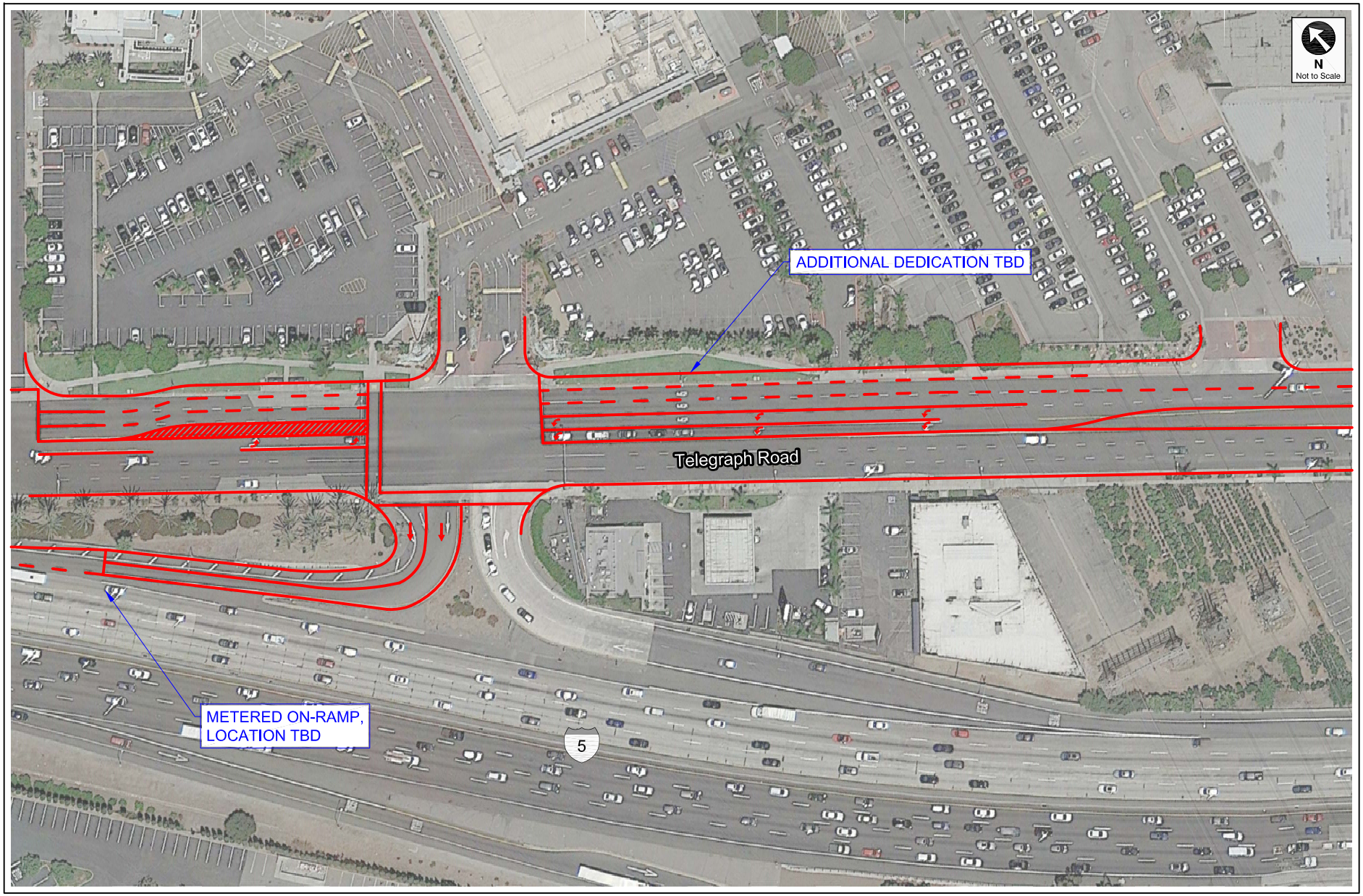
INTERSECTION 11 - ATLANTIC BOULEVARD & TELEGRAPH ROAD
CONCEPTUAL MITIGATION

APPENDIX
E-1



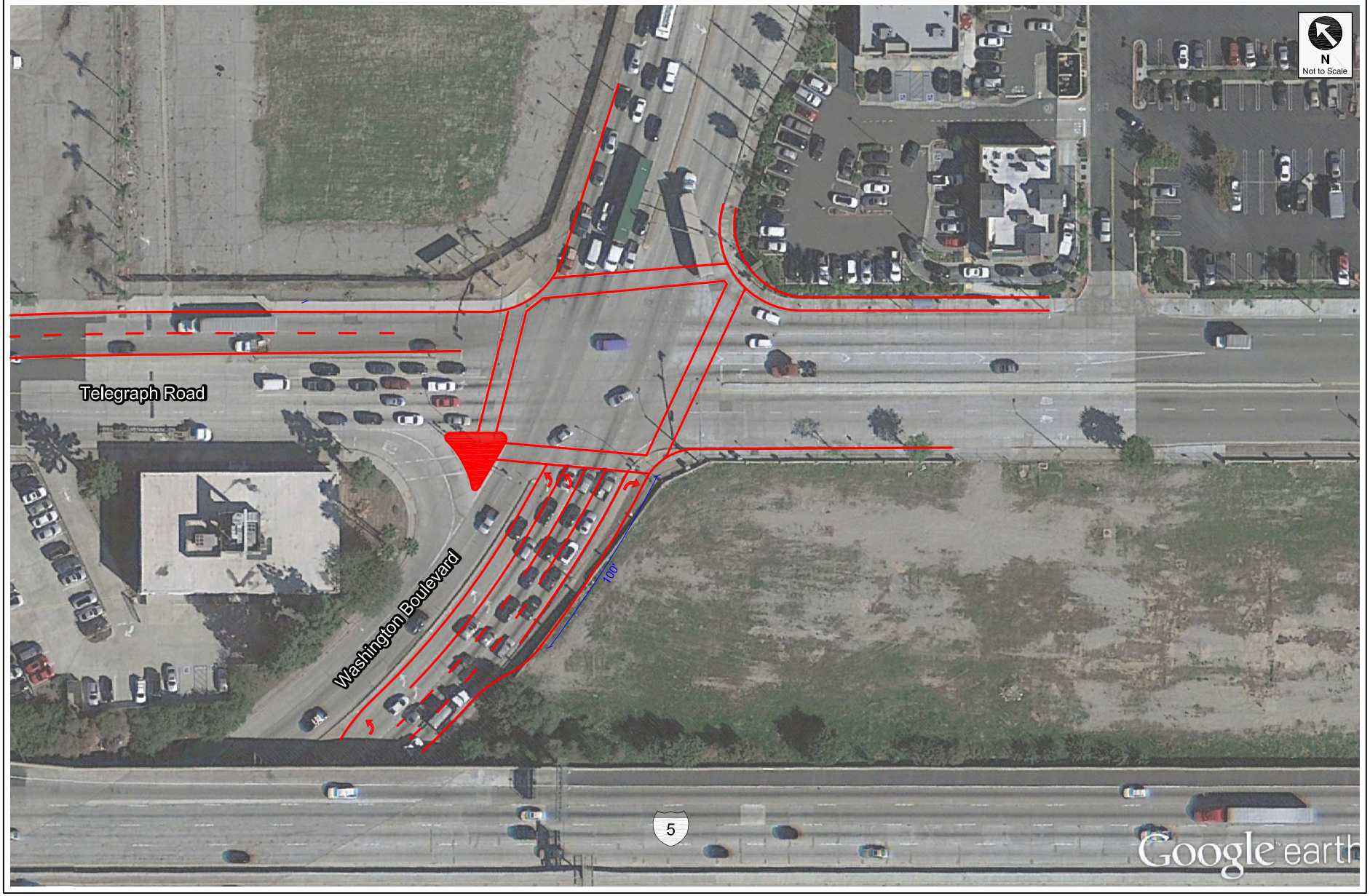
INTERSECTION 12 & 13 - I-5 NORTHBOUND RAMPS/CAMFIELD AVENUE, HOEFNER AVENUE, & TELEGRAPH ROAD
CONCEPTUAL MITIGATION

APPENDIX
E-2



INTERSECTIONS 17 - I-5 RAMPS / COMMERCE CASINO & TELEGRAPH ROAD
CONCEPTUAL MITIGATION

APPENDIX
E-3



INTERSECTION 18 - WASHINGTON BOULEVARD & TELEGRAPH ROAD
CONCEPTUAL MITIGATION

APPENDIX
E-4

Appendix F

Caltrans Analysis

Appendix F
Caltrans Analysis

This Appendix presents an analysis of Caltrans facilities, including freeway mainline segments, Caltrans intersections, and off-ramp queuing to provide further information to the decision makers.

ANALYZED FACILITIES

As shown in Table F-1, the analyses conducted on Caltrans facilities included freeway mainline segments, signalized and unsignalized ramp intersections, and off-ramp queuing.

Four freeway mainline segments on I-5 and two freeway mainline segments on I-710 were analyzed using HCM methodology to determine density, speed, and LOS. The LOS definitions for freeway mainline segments based on HCM are presented in Table F-2. One unsignalized and six signalized and intersections located at freeway ramps and under partial Caltrans jurisdiction were analyzed using HCM methodology to identify vehicle delay and LOS. Six freeway off-ramps were analyzed for ramp queue lengths using the Synchro software to estimate queues. Detailed LOS worksheets for each type of analysis are included in the Attachment.

Improvements to Caltrans freeway facilities tend to be beyond the feasibility of any individual project to implement; therefore, this analysis identifies a project's proportionate share of the future traffic growth on the Caltrans freeways facilities. The fair share, although not technically or legally tied to either a project impact or mitigation measure per se, is calculated as a percentage of the total projected traffic growth on a freeway mainline segment up to Year 2040. In accordance with Caltrans' desire to review *The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life* (Southern California Association of Governments, April 2016) long-range

planning horizon year of 2040, the cumulative analysis of freeway facilities herein includes projections of Year 2040 conditions without and with Project traffic.

FREEWAY MAINLINE SEGMENTS

Four freeway mainline segments on I-5 and two freeway mainline segments on I-710 were analyzed using the HCM methodology.

Existing Year 2018 Conditions

Existing freeway volume data was collected from Caltrans' Performance Measurement System for the average weekday traffic volume in September 2018 and is summarized in Table F-3. Table F-4 summarizes the results of the HCM analysis for Existing Conditions and Existing with Project Conditions.

Future Year 2025 Conditions

Traffic volumes were projected for Year 2025 to reflect the Project anticipated buildout year and are summarized in Table F-3. The existing traffic volumes were increased by both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2025 in Chapter 3. Table F-5 summarizes the results of the HCM analysis for Future without Project Conditions and Future with Project Conditions Year 2025.

Future Year 2040 Conditions

Traffic volumes were projected for Year 2040 to reflect a 22-year horizon and are summarized in Table F-3. The existing traffic volumes were increased by both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2025 in Chapter 3. Table F-6 summarizes the results of the

HCM analysis for Future without Project Conditions and Future with Project Conditions for Year 2040. As shown in Table F-7, the Project would add an average of 65 vehicles per hour in one direction. While the Project would contribute to future cumulative traffic growth on the freeway system, the Project traffic represents an average increase in traffic of only 4.66%. Project traffic growth would represent the addition of four cars every 15 minutes per lane of freeway, a small incremental increase.

INTERSECTIONS

As described in Chapter 2, a total of 29 intersections located in the City were analyzed as part of the Transportation Impact Study according to the significance thresholds established by the lead agency (the City). As shown in Table F-1, this Caltrans analysis focused on the one unsignalized and six signalized freeway ramp locations associated with I-5 and I-710, which are Caltrans-operated facilities within the City.

Overview

As described in Chapter 5 of the Transportation Impact Study, in response to significant impacts identified using City significance criteria, the Project would implement a TDM program, which would reduce Project traffic throughout the Study Area and generally improve intersection operating conditions. Caltrans does not have specific criteria to determine significance of incremental changes in intersection operations. Therefore, the significance of the traffic-related impacts on Caltrans facilities is identified by the analyses based on the lead agency's significance thresholds, which is presented in Chapters 2 through 5 of the Transportation Impact Study.

The intersections under Caltrans jurisdiction, as listed in Table F-1, were further analyzed using the HCM methodology according to *Guide for the Preparation of Traffic Impact Studies*, (Caltrans, December 2002) and implemented using the Vistro software. Table F-8 summarizes the LOS definitions for signalized intersections.

Existing Year 2018 Conditions

The analysis of Year 2018 conditions was conducted using the traffic volumes for Year 2018 utilized for the Existing Conditions analysis presented in Chapter 2. Table F-9 summarizes the results of the signalized and unsignalized HCM analysis for Existing Conditions and Existing with Project Conditions for Year 2018.

Future Year 2025 Conditions

The Year 2025 traffic volumes were developed by increasing the Existing traffic volumes with both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2025 in Chapter 3 of the Transportation Impact Study. Table F-10 summarizes the results of the signalized and unsignalized HCM analysis for Future without Project conditions and Future with Project Conditions for Year 2025.

Future Year 2040 Conditions

The Year 2040 traffic volumes were developed by increasing the Existing traffic volumes with both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2040 in Chapter 3 of the Transportation Impact Study. Table F-11 summarizes the results of the signalized HCM analysis for Future without Project Conditions and Future with Project Conditions for Year 2040.

OFF-RAMP QUEUES

Five off-ramps from I-5 and one off-ramp from I-710 were analyzed to determine whether the lengths of the ramps were sufficient to accommodate vehicle queue lengths. The queue lengths were estimated using Vistro, which reports the 95th percentile queue length, in feet, for each approach lane on the off-ramp.

The assessment of the off-ramps includes a review of the vehicle queue length as compared to the total available queuing capacity of the ramp to determine whether the vehicle queue would extend beyond the length of the ramp onto the mainline. To this end, the queuing analysis looks at two separate components of ramp capacity: the length of each approach lane to the intersection and the remaining length of the ramp, behind any approach lane delineation lines, to the gore point where the ramp diverges from the freeway mainline. The queue may exceed the striped length of a given approach lane; as long as there is sufficient additional queuing capacity on the ramp, it will not spill over onto the mainline.

Existing Year 2018 Conditions

The analysis of Year 2018 conditions was conducted using available traffic count data utilized for the Existing Conditions analysis presented in Chapter 2. Table F-12 summarizes the results of the queuing analysis for Existing Conditions and Existing with Project Conditions for Year 2018.

Future Year 2025 Conditions

The Year 2025 traffic volumes were developed by increasing the Existing traffic volumes by both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2025 in Chapter 3 of the Transportation Impact Study. Table F-13 summarizes the results of the queuing analysis for Future without Project Conditions and Future with Project Conditions for Year 2025.

Future Year 2040 Conditions

The Year 2040 traffic volumes were developed by increasing the Existing traffic volumes by both ambient growth (assumed to be 1% per year) and related project traffic, in the same manner as Future without Project traffic volumes were developed for Year 2040 in Chapter 3 of the Transportation Impact Study. Table F-14 summarizes the results of the queuing analysis for Future without Project Conditions and Future with Project Conditions for Year 2040.

Off-Ramp Results

The queue at all six off-ramps along I-5 and I-710 are not anticipated to extend beyond the available capacity during the analyzed peak hours under Existing Conditions and Future Conditions Year 2025, without and with Project traffic. The queue at the I-5 Northbound Off-Ramp to Telegraph Road during both analyzed peak hours is anticipated to extend beyond the available capacity under Future Conditions Year 2040, without and with Project traffic. The addition of Project traffic does not substantially increase the off-ramp queue under Future with Project Conditions Year 2040 (approximately four vehicle lengths during the morning peak hour and three vehicle lengths during afternoon peak hour). The queues at the remaining five off-ramps would not extend onto the freeway mainline under Future with Project Conditions Year 2040.

TABLE F-1
ANALYZED CALTRANS FACILITIES

ID	Location
Freeway Mainline Segments	
FS-1.	I-5 between Slauson Avenue & Garfield Avenue
FS-2.	I-5 between Garfield Avenue & Washington Boulevard
FS-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard
FS-4.	I-5 between Atlantic Boulevard & I-710
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard
Signalized and Unsignalized Ramp Intersections	
Signalized Ramp Intersections	
S-1.	I-5 Northbound Ramps/Camfield Avenue & Telegraph Road (Intersection #12)
S-2.	I-5 Northbound Ramps/Commerce Casino & Telegraph Road (Intersection #17)
S-3.	I-5 Northbound Ramps & Telegraph Road (Intersection #20)
S-4.	Eastern Avenue & I-5 Southbound Ramps/Stevens Place (Intersection #22)
S-5.	I-5 Southbound Ramps & Washington Boulevard (Intersection #25)
S-6.	Atlantic Boulevard/I-710 Northbound Ramps & Bandini Boulevard (Intersection #26)
Unsignalized Ramp Intersections	
U-1.	I-5 Southbound Ramps & Bandini Boulevard (Intersection #28)
Off-Ramp Queues	
Q-1.	I-5 Northbound Off Ramp to Telegraph Road/Camfield Avenue (Intersection #12)
Q-3.	I-5 Northbound Off Ramp to Telegraph Road/Commerce Casino (Intersection #17)
Q-3.	I-5 Northbound Off Ramp to Telegraph Road (Intersection #20)
Q-4.	I-5 Southbound Off Ramp to Eastern Avenue/Stevens Place (Intersection #22)
Q-5.	I-5 Southbound Off Ramp to Washington Boulevard (intersection #25)
Q-6.	I-710 Northbound Off Ramp to Atlantic Boulevard (Intersection #26)

TABLE F-2
FREEWAY SEGMENT LEVEL OF SERVICE

Level of Service	Description	Density [a]
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 and ≤ 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 and ≤ 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 and ≤ 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 and ≤ 45
F	Represents a breakdown in flow and oversaturated conditions.	> 45

Notes

Source: *Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis* (Transportation Research Board, 2016) and Caltrans.

[a] Density is defined in vehicles per mile per lane and describes the proximity to other vehicles and is related to the freedom to maneuver within the traffic stream (*Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis)*.

TABLE F-3
FREEWAY MAINLINE SEGMENT TRAFFIC VOLUMES

ID	Freeway Mainline Segment	Peak Hour	Direction	Vehicles per Hour (VPH)					
				Existing Conditions (Year 2018) [a]	Existing with Project Conditions (Year 2018)	Future without Project Conditions (Year 2025)	Future with Project Conditions (Year 2025)	Future without Project Conditions (Year 2040)	Future with Project Conditions (Year 2040)
FS-1.	I-5 between Slauson Avenue & Garfield Avenue	AM Peak Hour	NB	6,417	6,495	6,906	6,984	7,869	7,947
			SB	5,702	5,743	6,136	6,177	6,991	7,032
		PM Peak Hour	NB	5,914	6,055	6,365	6,506	7,252	7,393
			SB	5,348	5,505	5,795	5,952	6,598	6,755
FS-2.	I-5 between Garfield Avenue & Washington Boulevard	AM Peak Hour	NB	6,328	6,376	6,805	6,853	7,754	7,802
			SB	6,257	6,287	6,734	6,764	7,673	7,703
		PM Peak Hour	NB	5,567	5,691	6,020	6,144	6,855	6,979
			SB	4,849	4,965	5,258	5,374	5,986	6,102
FS-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard	AM Peak Hour	NB	6,830	6,846	7,345	7,361	8,370	8,386
			SB	6,114	6,168	6,588	6,642	7,505	7,559
		PM Peak Hour	NB	6,362	6,401	6,879	6,918	7,834	7,873
			SB	4,149	4,200	4,504	4,555	5,127	5,178
FS-4.	I-5 between Atlantic Boulevard & I-710	AM Peak Hour	NB	7,211	7,276	7,734	7,799	8,815	8,880
			SB	6,424	6,527	6,923	7,026	7,886	7,989
		PM Peak Hour	NB	6,948	7,196	7,513	7,761	8,556	8,804
			SB	3,862	4,047	4,169	4,354	4,749	4,934
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard	AM Peak Hour	NB	6,423	6,436	6,887	6,900	7,850	7,863
			SB	6,730	6,737	7,206	7,213	8,216	8,223
		PM Peak Hour	NB	6,170	6,192	6,625	6,647	7,550	7,572
			SB	6,570	6,595	7,061	7,086	8,046	8,071
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard	AM Peak Hour	NB	6,331	6,337	6,782	6,788	7,732	7,738
			SB	3,919	3,922	4,196	4,199	4,784	4,787
		PM Peak Hour	NB	5,848	5,851	6,259	6,262	7,137	7,140
			SB	4,068	4,073	4,366	4,371	4,976	4,981

Notes
[a] Traffic volumes based on average September 2018 weekday peak hour traffic data from Caltrans' *Performance Measurement System*.

TABLE F-4
EXISTING CONDITIONS (YEAR 2018)
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Existing Conditions			Existing with Project Conditions		
				Speed [a][b]	**Density** [b][c]	**LOS**	**Speed** [a][b]	**Density** [b][c]	**LOS**
FS-1.	I-5 between Slauson Avenue & Garfield Avenue	AM	NB	52	34	D	52	34	D
			SB	52	30	D	52	30	D
		PM	NB	52	31	D	52	32	D
			SB	52	28	D	52	29	D
FS-2.	I-5 between Garfield Avenue & Washington Boulevard	AM	NB	52	33	D	52	34	D
			SB	52	33	D	52	33	D
		PM	NB	52	29	D	52	30	D
			SB	52	26	C	52	26	D
F-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard	AM	NB	52	36	E	52	36	E
			SB	52	32	D	52	33	D
		PM	NB	52	34	D	52	34	D
			SB	52	22	C	52	22	C
FS-4.	I-5 between Atlantic Boulevard & I-710	AM	NB	52	38	E	52	39	E
			SB	52	34	D	52	35	D
		PM	NB	52	37	E	52	38	E
			SB	52	20	C	52	21	C
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard	AM	NB	48	37	E	48	37	E
			SB	48	39	E	48	39	E
		PM	NB	48	35	E	48	36	E
			SB	48	38	E	48	38	E
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard	AM	NB	47	37	E	47	37	E
			SB	47	23	C	47	23	C
		PM	NB	47	34	D	47	35	D
			SB	47	24	C	47	24	C

Notes

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis*(Transportation Research Board, 2016).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 58.2 mph. Free-flow speed, as defined in HCM 6th Edition, is the theoretical speed when the and flow rate of the freeway mainline segment are both zero.

TABLE F-5
FUTURE CONDITIONS (YEAR 2025)
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Future without Project Conditions			Future with Project Conditions		
				Speed [a][b]	**Density** [b][c]	**LOS**	**Speed** [a][b]	**Density** [b][c]	**LOS**
FS-1.	I-5 between Slauson Avenue & Garfield Avenue	AM	NB	52	37	E	52	37	E
			SB	52	32	D	52	33	D
		PM	NB	52	34	D	52	34	D
			SB	52	31	D	52	31	D
FS-2.	I-5 between Garfield Avenue & Washington Boulevard	AM	NB	52	36	E	52	36	E
			SB	52	36	E	52	36	E
		PM	NB	52	32	D	52	32	D
			SB	52	28	D	52	28	D
F-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard	AM	NB	52	39	E	52	39	E
			SB	52	35	D	52	35	E
		PM	NB	52	36	E	52	37	E
			SB	52	24	C	52	24	C
FS-4.	I-5 between Atlantic Boulevard & I-710	AM	NB	51	42	E	51	43	E
			SB	52	37	E	52	37	E
		PM	NB	52	40	E	51	42	E
			SB	52	22	C	52	23	C
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard	AM	NB	48	40	E	48	40	E
			SB	48	41	E	48	41	E
		PM	NB	48	38	E	48	38	E
			SB	48	41	E	48	41	E
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard	AM	NB	47	40	E	47	40	E
			SB	47	25	C	47	25	C
		PM	NB	47	37	E	47	37	E
			SB	47	26	C	47	26	C

Notes

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis*(Transportation Research Board, 2016).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 58.2 mph. Free-flow speed, as defined in HCM 6th Edition, is the theoretical speed when the and flow rate of the freeway mainline segment are both zero.

TABLE F-6
FUTURE CONDITIONS (YEAR 2040)
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION

ID	Freeway Segment	Peak Hour	Direction	Future without Project Conditions			Future with Project Conditions		
				Speed [a][b]	**Density** [b][c]	**LOS**	**Speed** [a][b]	**Density** [b][c]	**LOS**
FS-1.	I-5 between Slauson Avenue & Garfield Avenue	AM	NB	50	43	E	50	44	E
			SB	52	37	E	52	37	E
		PM	NB	52	39	E	52	40	E
			SB	52	35	D	52	36	E
FS-2.	I-5 between Garfield Avenue & Washington Boulevard	AM	NB	51	42	E	51	43	E
			SB	51	42	E	51	42	E
		PM	NB	52	36	E	52	37	E
			SB	52	32	D	52	32	D
F-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard	AM	NB	Overflow	Overflow	F	Overflow	Overflow	F
			SB	52	40	E	51	41	E
		PM	NB	50	43	E	50	43	E
			SB	52	27	D	52	27	D
FS-4.	I-5 between Atlantic Boulevard & I-710	AM	NB	Overflow	Overflow	F	Overflow	Overflow	F
			SB	50	44	E	50	45	E
		PM	NB	Overflow	Overflow	F	Overflow	Overflow	F
			SB	52	25	C	52	26	D
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard	AM	NB	48	45	E	49	45	E
			SB	Overflow	Overflow	F	Overflow	Overflow	F
		PM	NB	48	43	E	48	44	E
			SB	Overflow	Overflow	F	Overflow	Overflow	F
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard	AM	NB	47	45	F	47	45	F
			SB	47	28	D	47	28	D
		PM	NB	47	42	E	47	42	E
			SB	47	29	D	47	29	D

Notes

Overflow: Traffic demand exceeds the available capacity of the freeway mainline segment .

[a] Mean speed measured in miles per hour (mph).

[b] Methodology from *Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis* (Transportation Research Board, 2016).

[c] Measured in vehicles per mile per lane (v/m/l) for freeways with a free-flow speed of 58.2 mph. Free-flow speed, as defined in HCM 6th Edition, is the theoretical speed when the de
and flow rate of the freeway mainline segment are both zero.

TABLE F-7
PROPORTION OF PROJECTED FUTURE TRAFFIC
FUTURE YEAR 2040 CONDITIONS

ID	Freeway Mainline Segment	Peak Hour	Direction	Vehicles per Hour (VPH)					Proportion of Project-Related Traffic
				Existing	Related Projects	Ambient Growth	Project	Total Growth	
FS-1.	I-5 between Slauson Avenue & Garfield Avenue	AM Peak Hour	NB	6,417	40	1,412	78	1,530	5.10%
			SB	5,702	35	1,254	41	1,330	3.08%
		PM Peak Hour	NB	5,914	37	1,301	141	1,479	9.53%
			SB	5,348	73	1,177	157	1,407	11.16%
FS-2.	I-5 between Garfield Avenue & Washington Boulevard	AM Peak Hour	NB	6,328	34	1,392	48	1,474	3.26%
			SB	6,257	39	1,377	30	1,446	2.07%
		PM Peak Hour	NB	5,567	63	1,225	124	1,412	8.78%
			SB	4,849	70	1,067	116	1,253	9.26%
FS-3.	I-5 between Washington Boulevarrd & Atlantic Boulevard	AM Peak Hour	NB	6,830	37	1,503	16	1,556	1.03%
			SB	6,114	46	1,345	54	1,445	3.74%
		PM Peak Hour	NB	6,362	72	1,400	39	1,511	2.58%
			SB	4,149	65	913	51	1,029	4.96%
FS-4.	I-5 between Atlantic Boulevard & I-710	AM Peak Hour	NB	7,211	18	1,586	65	1,669	3.89%
			SB	6,424	49	1,413	103	1,565	6.58%
		PM Peak Hour	NB	6,948	79	1,529	248	1,856	13.36%
			SB	3,862	37	850	185	1,072	17.26%
FS-5.	I-710 between Florence Avenue & Atlantic Boulevard	AM Peak Hour	NB	6,423	14	1,413	13	1,440	0.90%
			SB	6,730	5	1,481	7	1,493	0.47%
		PM Peak Hour	NB	6,170	23	1,357	22	1,402	1.57%
			SB	6,570	31	1,445	25	1,501	1.67%
FS-6.	I-710 between Atlantic Boulevard & Washington Boulevard	AM Peak Hour	NB	6,331	8	1,393	6	1,407	0.43%
			SB	3,919	3	862	3	868	0.35%
		PM Peak Hour	NB	5,848	2	1,287	3	1,292	0.23%
			SB	4,068	13	895	5	913	0.55%
Average Proportion of Project-Related Traffic to Mainline Segments									**4.66%**

TABLE F-8
LEVEL OF SERVICE DEFINITIONS FOR CALTRANS INTERSECTIONS

Level of Service	Description	Delay [a]	
		Signalized Intersections	Unsignalized Intersections
A	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.	≤ 10	0.0 - 10.0
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	> 10 and ≤ 20	10.1 - 15.0
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	> 20 and ≤ 35	15.1 - 25.0
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	> 35 and ≤ 55	25.1 - 35.0
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	> 55 and ≤ 80	35.1 - 50.0
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	> 80	> 50.0

Notes

Source: *Highway Capacity Manual, 6th Edition, A Guide for Multimodal Mobility Analysis* (Transportation Research Board, 2016).

[a] Measured in seconds.

TABLE F-9
EXISTING WITH PROJECT CONDITIONS (YEAR 2018)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions	
			Delay	LOS	Delay	LOS
Signalized Ramp Intersections						
S-1.	I-5 Northbound Ramps/Camfield Avenue &	AM	28.5	C	28.5	C
	Telegraph Road (Intersection #12)	PM	35.0	C	90.1	F
S-2.	I-5 Northbound Ramps/Commerce Casino &	AM	28.2	C	28.1	C
	Telegraph Road (Intersection #17)	PM	47.9	D	96.1	F
S-3.	I-5 Northbound Ramps &	AM	27.6	C	28.5	C
	Telegraph Road (Intersection #20)	PM	33.7	C	35.2	D
S-4.	Eastern Avenue &	AM	26.2	C	26.3	C
	I-5 Southbound Ramps/Stevens Place (Intersection #22)	PM	18.6	B	21.7	C
S-5.	I-5 Southbound Ramps &	AM	15.5	B	22.3	C
	Washington Boulevard (Intersection #25)	PM	14.0	B	17.1	B
S-6.	Atlantic Boulevard/I-710 Northbound Ramps &	AM	30.8	C	30.8	C
	Bandini Boulevard (Intersection #26)	PM	42.9	D	45.4	D
Unsignalized Ramp Intersections						
U-1.	I-5 Southbound Ramps &	AM	Overflow	F	Overflow	F
	Bandini Boulevard (Intersection #28)	PM	Overflow	F	Overflow	F

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Overflow = represents output which exceeds delay thresholds

Results per Vistro 5 (HCM 6th Edition methodology).

TABLE F-10
FUTURE WITH PROJECT CONDITIONS (YEAR 2025)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions	
			Delay	LOS	Delay	LOS
Signalized Ramp Intersections						
S-1.	I-5 Northbound Ramps/Camfield Avenue &	AM	29.2	C	29.4	C
	Telegraph Road (Intersection #12)	PM	41.7	D	141.1	F
S-2.	I-5 Northbound Ramps/Commerce Casino &	AM	28.6	C	29.0	C
	Telegraph Road (Intersection #17)	PM	99.1	F	173.1	F
S-3.	I-5 Northbound Ramps &	AM	32.1	C	33.7	C
	Telegraph Road (Intersection #20)	PM	46.0	D	50.1	D
S-4.	Eastern Avenue &	AM	26.5	C	26.6	C
	I-5 Southbound Ramps/Stevens Place (Intersection #22)	PM	19.5	B	22.6	C
S-5.	I-5 Southbound Ramps &	AM	18.0	B	19.3	B
	Washington Boulevard (Intersection #25)	PM	15.2	B	18.9	B
S-6.	Atlantic Boulevard/I-710 Northbound Ramps &	AM	34.9	C	35.1	D
	Bandini Boulevard (Intersection #26)	PM	77.3	E	85.2	F
Unsignalized Ramp Intersections						
U-1.	I-5 Southbound Ramps &	AM	Overflow	F	Overflow	F
	Bandini Boulevard (Intersection #28)	PM	Overflow	F	Overflow	F

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Overflow = represents output which exceeds delay thresholds

Results per Vistro 5 (HCM 6th Edition methodology).

TABLE F-11
FUTURE WITH PROJECT CONDITIONS (YEAR 2040)
INTERSECTION PEAK HOUR LEVELS OF SERVICE

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions	
			Delay	LOS	Delay	LOS
Signalized Ramp Intersections						
S-1.	I-5 Northbound Ramps/Camfield Avenue &	AM	30.2	C	30.9	C
	Telegraph Road (Intersection #12)	PM	59.6	E	153.8	F
S-2.	I-5 Northbound Ramps/Commerce Casino &	AM	33.4	C	41.6	D
	Telegraph Road (Intersection #17)	PM	Overflow	F	Overflow	F
S-3.	I-5 Northbound Ramps &	AM	48.2	D	52.0	D
	Telegraph Road (Intersection #20)	PM	76.9	E	83.7	F
S-4.	Eastern Avenue &	AM	27.2	C	27.6	C
	I-5 Southbound Ramps/Stevens Place (Intersection #22)	PM	20.3	C	23.4	C
S-5.	I-5 Southbound Ramps &	AM	19.2	B	21.3	C
	Washington Boulevard (Intersection #25)	PM	17.9	B	25.9	C
S-6.	Atlantic Boulevard/I-710 Northbound Ramps &	AM	46.3	D	46.5	D
	Bandini Boulevard (Intersection #26)	PM	164.6	F	175.3	F
Unsignalized Ramp Intersections						
U-1.	I-5 Southbound Ramps &	AM	Overflow	F	Overflow	F
	Bandini Boulevard (Intersection #28)	PM	Overflow	F	Overflow	F

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Overflow = represents output which exceeds delay thresholds

Results per Vistro 5 (HCM 6th Edition methodology).

TABLE F-12
EXISTING CONDITIONS (YEAR 2018)
FREEWAY OFF-RAMP QUEUE EVALUATION

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Existing Conditions				Existing with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Camfield Avenue	Left	175	130		137		136		151	
	(Intersection #12)	Shared Left/Through/Right	175	129		136		135		147	
		Ramp	360	0	NO	0	NO	0	NO	0	NO
Q-2.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Commerce Casino	Shared Left/Through	330	142		100		177		209	
	(Intersection #17)	Right	330	310		228		310		228	
		Ramp	310	0	NO	0	NO	0	NO	0	NO
Q-3.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road	Left	210	210		210		210		210	
	(Intersection #20)	Shared Left/Right	210	210		210		210		210	
		Ramp	360	156	NO	72	NO	187	NO	102	NO
Q-4.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Eastern Avenue/Stevens Place	Left	360	231		105		222		91	
	(Intersection #22)	Shared Through/Right	360	220		96		239		182	
		Right	360	219		95		239		180	
		Ramp	520	0	NO	0	NO	0	NO	0	NO
Q-5.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Washington Boulevard	Left	340	275		114		290		127	
	(Intersection #25)	Left	340	275		114		290		127	
		Right	55	55		26		55		25	
		Ramp	500	31	NO	0	NO	29	NO	0	NO
Q-6.	I-710 Northbound Off Ramp to	I-710 Northbound Off Ramp									
	Atlantic Boulevard	Shared Through/Right	660	237		327		241		348	
	(Intersection #26)	Ramp	180	0	NO	0	NO	0	NO	0	NO

Notes

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

TABLE F-13
FUTURE CONDITIONS (YEAR 2025)
FREEWAY OFF-RAMP QUEUE EVALUATION

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Camfield Avenue	Left	175	150		161		157		174	
	(Intersection #12)	Shared Left/Through/Right	175	149		159		155		169	
		Ramp	360	0	NO	0	NO	0	NO	0	NO
Q-2.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Commerce Casino	Shared Left/Through	330	147		108		181		218	
	(Intersection #17)	Right	330	321		258		321		258	
		Ramp	310	0	NO	0	NO	0	NO	0	NO
Q-3.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road	Left	210	210		210		210		210	
	(Intersection #20)	Shared Left/Right	210	210		210		210		210	
		Ramp	360	234	NO	159	NO	282	NO	207	NO
Q-4.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Eastern Avenue/Stevens Place	Left	360	240		111		231		97	
	(Intersection #22)	Shared Through/Right	360	234		107		253		192	
		Right	360	234		105		253		190	
		Ramp	520	0	NO	0	NO	0	NO	0	NO
Q-5.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Washington Boulevard	Left	340	292		124		306		137	
	(Intersection #25)	Left	340	292		124		306		137	
		Right	55	55		27		55		27	
		Ramp	500	35	NO	0	NO	33	NO	0	NO
Q-6.	I-710 Northbound Off Ramp to	I-710 Northbound Off Ramp									
	Atlantic Boulevard	Shared Through/Right	660	281		498		286		536	
	(Intersection #26)	Ramp	180	0	NO	0	NO	0	NO	0	NO

Notes

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

TABLE F-14
FUTURE CONDITIONS (YEAR 2040)
FREEWAY OFF-RAMP QUEUE EVALUATION

ID	Freeway Off-ramp	Ramp and Lane Description	Vehicle Storage Capacity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Camfield Avenue	Left	175	168		175		175		175	
	(Intersection #12)	Shared Left/Through/Right	175	168		175		174		175	
		Ramp	360	0	NO	10	NO	0	NO	32	NO
Q-2.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road/Commerce Casino	Shared Left/Through	330	165		125		197		240	
	(Intersection #17)	Right	330	330		330		330		330	
		Ramp	310	52	NO	36	NO	52	NO	36	NO
Q-3.	I-5 Northbound Off Ramp to	I-5 Northbound Off Ramp									
	Telegraph Road	Left	210	210		210		210		210	
	(Intersection #20)	Shared Left/Right	210	210		210		210		210	
		Ramp	360	456	**YES**	413	**YES**	563	**YES**	489	**YES**
Q-4.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Eastern Avenue/Stevens Place	Left	360	264		126		255		111	
	(Intersection #22)	Shared Through/Right	360	257		121		276		204	
		Right	360	257		119		277		202	
		Ramp	520	0	NO	0	NO	0	NO	0	NO
Q-5.	I-5 Southbound Off Ramp to	I-5 Southbound Off Ramp									
	Washington Boulevard	Left	340	320		141		334		154	
	(Intersection #25)	Left	340	320		141		334		154	
		Right	55	55		31		55		30	
		Ramp	500	44	NO	0	NO	41	NO	0	NO
Q-6.	I-710 Northbound Off Ramp to	I-710 Northbound Off Ramp									
	Atlantic Boulevard	Shared Through/Right	660	344		660		351		660	
	(Intersection #26)	Ramp	180	0	NO	133	NO	0	NO	178	NO

Notes

[a] Expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Attachment

Level of Service Worksheets

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,417	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,776	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**33.9**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,702	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,578	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **30.1** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,328	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,751	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**33.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,257	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,732 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **33.0** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,830	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,890 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **36.1** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,114	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,692 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **32.3** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,211	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,996	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.2**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**38.2**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,424	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,778	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **33.9** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,423	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,778 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **36.9** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,730	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,863 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq$ BP: FFS_{adj} *(Eq. 12-1)*

If BP < $v_p \leq$ c: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **38.6** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,331	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,752	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**37.3**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	3,919	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,085	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **23.1** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,914	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,637	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**31.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,348	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,480 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **28.2** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,567	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,541 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **29.4** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,849	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,342	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**25.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**C**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,362	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,761	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**33.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,149	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,148 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **21.9** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,948	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,923	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.7**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	3,862	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,069	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq$ BP: FFS_{adj}			*(Eq. 12-1)*	
	If BP < $v_p \leq$ c: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**20.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**C**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,170	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,708 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **35.4** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,570	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,818	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?			NO		

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**48.2**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**37.7**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,848	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,618 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **34.4** pc/mi/ln

Level of Service (LOS): — LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,068	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,126	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**47.0**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**24.0**	pc/mi/ln	
Level of Service (LOS):		LOS:	**C**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,495	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,797 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **34.3** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,743	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,589	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **30.3** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,376	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,765	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**33.7**	pc/mi/ln
Level of Service (LOS):		LOS:	**D**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,287	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,740	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **33.2** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,846	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,895	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,168	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,707	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**32.6**	pc/mi/ln
Level of Service (LOS):		LOS:	**D**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,276	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,014	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.1**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**38.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,527	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,806 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **34.5** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,436	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,781 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **37.0** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,737	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,864 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **38.7** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,337	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,754	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**37.3**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	3,922	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,085 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **23.1** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,055	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,676 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **32.0** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,505	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,524	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **29.1** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,691	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,575	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**30.1**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,965	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,374	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**26.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,401	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,771	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**33.8**	pc/mi/ln
Level of Service (LOS):		LOS:	**D**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,200	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,162	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**22.2**	pc/mi/ln
Level of Service (LOS):		LOS:	**C**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,196	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,991	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.2**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**38.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,047	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,120	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **21.4** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,192	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,714 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **35.6** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,595	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,825	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**48.2**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**37.9**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,851	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,619	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **34.5** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,073	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,127	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**24.0**	pc/mi/ln
Level of Service (LOS):		LOS:	**C**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,906	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,911	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq$ BP: FFS_{adj}			*(Eq. 12-1)*	
	If BP < $v_p \leq$ c: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**36.5**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,136	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,698	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**32.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,805	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,883	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**35.9**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,734	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,864	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**35.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,345	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,033 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **51.9** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **39.2** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,588	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,823	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**34.8**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,734	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,140	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**50.8**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**42.1**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,923	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,916 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **36.6** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,887	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,906 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **39.5** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,206	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,994	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**48.2**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**41.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,782	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,877	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **39.9** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,196	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,161 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **24.7** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,365	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,762	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**33.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,795	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,604	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**30.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,020	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,666	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**31.8**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,258	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,455	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**27.8**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,879	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,904	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.3**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,504	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,246	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**23.8**	pc/mi/ln	
Level of Service (LOS):		LOS:	**C**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,513	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,079	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**51.5**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**40.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,169	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,154 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **22.0** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,625	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,833 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **38.0** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,061	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,954 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **40.5** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,259	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,732 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **36.9** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,366	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,208 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **25.7** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,984	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,933	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.9**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,177	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,709	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**32.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,853	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,897	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,764	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,872	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**35.7**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,361	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,037	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**51.9**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**39.3**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,642	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,838 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **35.1** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,799	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,158 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **50.5** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **42.7** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,026	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,944 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **37.1** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,900	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,910 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **39.6** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,213	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,996 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **41.4** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,788	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,879	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **40.0** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,199	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,162	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**24.7**	pc/mi/ln
Level of Service (LOS):		LOS:	**C**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,506	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,801	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**34.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,952	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,647 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **31.4** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,144	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,700	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
			S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*		D:	**32.4**	pc/mi/ln
Level of Service (LOS):			LOS:	**D**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,374	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,487	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **28.4** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,918	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,915	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.5**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,555	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,261	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**24.1**	pc/mi/ln	
Level of Service (LOS):		LOS:	**C**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,761	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,148	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**50.7**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**42.4**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,354	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,205	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **23.0** pc/mi/ln

Level of Service (LOS): LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,647	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,840	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **38.2** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,086	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,961 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **40.7** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,262	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,733 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **36.9** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,371	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,210 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **25.7** pc/mi/ln

Level of Service (LOS): — LOS: **C**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,869	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,178	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**50.2**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**43.4**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,991	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,935 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **36.9** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,754	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,146	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**50.7**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**42.3**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,673	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,124	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**51.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**41.6**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,370	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,316	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,505	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,077	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**51.5**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**40.3**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,815	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,440	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,886	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,182	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq$ BP: FFS_{adj}			*(Eq. 12-1)*	
	If BP < $v_p \leq$ c: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**50.1**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**43.6**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,850	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,172	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**48.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**44.9**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,216	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,274	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,732	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,140 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq$ BP: FFS_{adj} *(Eq. 12-1)*

If BP < $v_p \leq$ c: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.2** mi/h

Density (D): D = v_p / S *(Eq. 12-11)* D: **45.3** pc/mi/ln

Level of Service (LOS): LOS: **F**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,784	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,324 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **28.2** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,252	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,007	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.1**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**38.5**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,598	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,826 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **34.8** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,855	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,897	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,986	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,657	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **31.6** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,834	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,168	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**50.4**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**43.0**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,127	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,419	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **27.1** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,556	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,368	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,749	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,314	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
			S:	**52.4**	mi/h
Density (D):		D = v_p / S *(Eq. 12-11)*	D:	**25.1**	pc/mi/ln
Level of Service (LOS):			LOS:	**C**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,550	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,089 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **43.3** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,046	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,227	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**n/a**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln
Level of Service (LOS):		LOS:	**F**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,137	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,975	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?			NO		

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**42.0**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,976	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	1.20	]	
		FFS:	47.0	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,377	pc/h/ln	
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?		NO			

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**29.3**	pc/mi/ln
Level of Service (LOS):		LOS:	**D**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,947	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,199 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **49.9** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **44.1** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,032	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,946	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.3**	mi/h	
Density (D):	D = v_p / S *(Eq. 12-11)*	D:	**37.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,802	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,159	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**50.5**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**42.8**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,703	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,132	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
			S:	**50.9**	mi/h
Density (D):		D = v_p / S *(Eq. 12-11)*	D:	**41.9**	pc/mi/ln
Level of Service (LOS):			LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,386	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,321	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,559	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,092	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **51.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **40.7** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,880	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,458	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **n/a** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **n/a** pc/mi/ln

Level of Service (LOS): LOS: **F**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,989	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,211	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
			S:	**49.7**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*		D:	**44.5**	pc/mi/ln
Level of Service (LOS):			LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,863	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]	
		[f_{RLC}:	0.00	]	
		FFS:	48.2	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	48.2	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,182	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,182	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,072	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,176	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**48.5**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**44.9**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,223	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,276 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **n/a** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **n/a** pc/mi/ln

Level of Service (LOS): LOS: **F**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,738	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,141 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **45.4** pc/mi/ln

Level of Service (LOS): LOS: **F**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY AM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,787	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,325 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **28.2** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Northbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,393	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,046	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**51.8**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**39.5**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

1 I-5 Southbound

between Slauson Avenue & Garfield Avenue ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,755	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,869 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **35.7** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Northbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,979	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,931	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}			*(Eq. 12-1)*	
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**36.9**	pc/mi/ln	
Level of Service (LOS):		LOS:	**E**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

2 I-5 Southbound

between Garfield Avenue & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	6,102	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	11	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,689	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}		*(Eq. 12-1)*	
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**52.4**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**32.2**	pc/mi/ln	
Level of Service (LOS):		LOS:	**D**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Northbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,873	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,179	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$:	FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$:	$FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
			S:	**50.2**	mi/h
Density (D):		D = v_p / S *(Eq. 12-11)*	D:	**43.4**	pc/mi/ln
Level of Service (LOS):			LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

3 I-5 Southbound

between Washington Boulevard & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	5,178	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	1,433	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* D: **27.3** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Northbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,804	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	9	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	0.00	]	
		[f_{RLC}:	0.00	]	
		FFS:	52.4	mi/h	
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	52.4	mi/h	
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,224	pc/h/ln	
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,224	pc/h/ln	
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	1,904	pc/h/ln	
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]	
		v_p:	2,437	pc/h/ln	

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*			
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$				
		S:	**n/a**	mi/h	
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**n/a**	pc/mi/ln	
Level of Service (LOS):		LOS:	**F**		

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

4 I-5 Southbound

between Atlantic Boulevard & I-710 ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,934	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	12	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	10	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	2.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_c):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 0.00]
[f_{RLC}: 0.00]
FFS: 52.4 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 52.4 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,224 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,224 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 1,904 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,365 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_c) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **52.4** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **26.1** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Northbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,572	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	8	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,096 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **48.2** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **43.5** pc/mi/ln

Level of Service (LOS): LOS: **E**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

5 I-710 Southbound

between Florence Avenue & Atlantic Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	8,071	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	7	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 0.00]
FFS: 48.2 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 48.2 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,182 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,182 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,072 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 2,234 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? **YES**

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): If $v_p \leq BP$: FFS_{adj} *(Eq. 12-1)*

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **n/a** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **n/a** pc/mi/ln

Level of Service (LOS): LOS: **F**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Northbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	7,140	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS):	BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*	[f_{LW}:	1.90	]
		[f_{RLC}:	1.20	]
		FFS:	47.0	mi/h
Adjusted Free Flow Speed (FFS_{adj}):	FFS x SAF *(Eq. 12-5)*	FFS_{adj}:	47.0	mi/h
Basic Freeway Seg. Capacity (c):	2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)*	c:	2,170	pc/h/ln
Adj. Freeway Seg. Capacity (c_{adj}):	c x CAF *(Eq. 12-8)*	c_{adj}:	2,170	pc/h/ln
Breakpoint (BP):	[1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)*	BP:	2,120	pc/h/ln
Flow Rate (v_p):	$\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*	[f_{HV}:	0.961	]
		v_p:	1,976	pc/h/ln
Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)?			NO	

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S):	If $v_p \leq BP$: FFS_{adj}	*(Eq. 12-1)*		
	If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$			
		S:	**47.0**	mi/h
Density (D):	$D = v_p / S$ *(Eq. 12-11)*	D:	**42.0**	pc/mi/ln
Level of Service (LOS):		LOS:	**E**	

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

The Citadel and 10-Acre Project

Highway Capacity Manual 6th Edition - Basic Freeway Segments Worksheet

6 I-710 Southbound

between Atlantic Boulevard & Washington Boulevard ***WEEKDAY PM Peak Hour***

GEOMETRIC DATA INPUTS			DEMAND INPUTS		
Base Free Flow Speed (BFFS):	58.2	mi/h	Hourly Demand Volume (V):	4,981	veh/h
Mainline Lanes (N):	4	lanes	Heavy Vehicle Percentage (P_T):	4.04	%
Lane Widths:	11	ft	Peak Hour Factor (PHF):	0.940	
Right-Side Lateral Clearance:	0	ft	Capacity Adj. Factor (CAF):	1.00	
Total Ramp Density (TRD):	3.0	ramps/mi	Speed Adj. Factor (SAF):	1.00	
Terrain Type:	Level		Density at Capacity (D_C):	45.0	pc/mi/ln
			Exponent Calibration Parameter (a):	2.00	

FREE FLOW SPEED, CAPACITY, & FLOW CALCULATIONS

Free Flow Speed (FFS): BFFS - f_{LW} - f_{RLC} - 3.22 x TRD ^ 0.84 *(Eq. 12-2)*

[f_{LW}: 1.90]
[f_{RLC}: 1.20]
FFS: 47.0 mi/h

Adjusted Free Flow Speed (FFS_{adj}): FFS x SAF *(Eq. 12-5)* — FFS_{adj}: 47.0 mi/h

Basic Freeway Seg. Capacity (c): 2,200 + 10 x (FFS_{adj} - 50) *(Eq. 12-6)* — c: 2,170 pc/h/ln

Adj. Freeway Seg. Capacity (c_{adj}): c x CAF *(Eq. 12-8)* — c_{adj}: 2,170 pc/h/ln

Breakpoint (BP): [1,000 + 40 x (75 - FFS_{adj})] x CAF ^ 2 *(Ex. 12-6)* — BP: 2,120 pc/h/ln

Flow Rate (v_p): $\frac{V}{(PHF \times N \times f_{HV})}$ *(Eq. 12-9)*

[f_{HV}: 0.961]
v_p: 1,378 pc/h/ln

Flow Rate > Adjusted Freeway Segment Capacity ($v_p > c_{adj}$)? NO

SPEED, DENSITY, & LEVEL OF SERVICE

Mean Speed (S): *(Eq. 12-1)*

If $v_p \leq BP$: FFS_{adj}

If $BP < v_p \leq c$: $FFS_{adj} - \frac{[(FFS_{adj} - c_{adj} / D_C) \times (v_p - BP)^a]}{(c_{adj} - BP)^a}$

S: **47.0** mi/h

Density (D): $D = v_p / S$ *(Eq. 12-11)* — D: **29.3** pc/mi/ln

Level of Service (LOS): LOS: **D**

Notes: Methodology from *Highway Capacity Manual 6th Edition* , Transportation Research Board, 2016.

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.394

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	215	15	10	7	57	61	274	466	60	224	345	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	215	15	10	7	57	61	274	466	60	224	345	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	4	3	2	14	15	69	117	15	56	86	2
Total Analysis Volume [veh/h]	215	15	10	7	57	61	274	466	60	224	345	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	19	0	33	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	6	6	18	50	50	9	42	42
g / C, Green / Cycle	0.10	0.10	0.06	0.06	0.19	0.56	0.56	0.10	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.08	0.04	0.04	0.17	0.16	0.16	0.07	0.11	0.11
s, saturation flow rate [veh/h]	1603	1596	1674	1431	1603	1683	1617	3113	1683	1670
c, Capacity [veh/h]	158	158	107	91	313	942	905	310	782	776
d1, Uniform Delay [s]	39.52	39.52	41.00	41.19	35.17	10.37	10.37	39.30	14.42	14.42
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.29	7.35	5.25	8.08	7.75	0.76	0.79	3.17	0.67	0.68
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
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.76	0.60	0.67	0.88	0.28	0.28	0.72	0.23	0.23
d, Delay for Lane Group [s/veh]	46.81	46.87	46.25	49.26	42.93	11.13	11.16	42.47	15.09	15.10
Lane Group LOS	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	2.87	2.87	1.51	1.50	6.15	2.56	2.47	2.42	2.09	2.07
50th-Percentile Queue Length [ft]	71.84	71.68	37.67	37.47	153.67	64.06	61.82	60.61	52.17	51.86
95th-Percentile Queue Length [veh]	5.17	5.16	2.71	2.70	10.21	4.61	4.45	4.36	3.76	3.73
95th-Percentile Queue Length [ft]	129.32	129.03	67.81	67.44	255.33	115.31	111.28	109.09	93.91	93.35

Movement, Approach, & Intersection Results

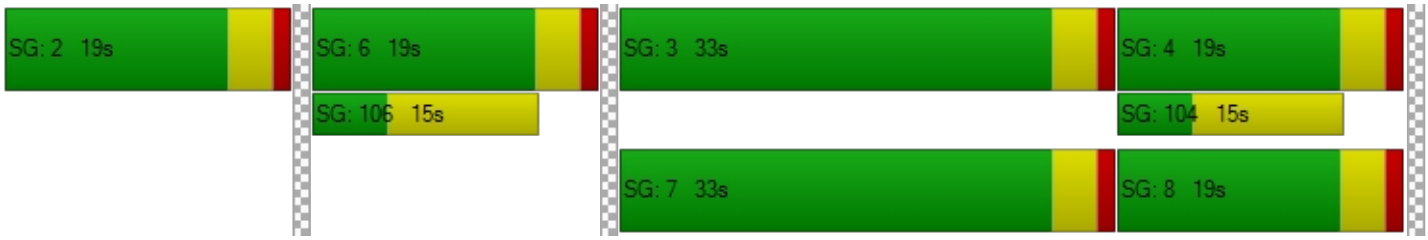
d_M, Delay for Movement [s/veh]	46.84	46.87	46.87	46.25	46.25	49.26	42.93	11.14	11.16	42.47	15.09	15.10
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.84			47.72			22.03			25.72		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.51											
Intersection LOS	C											
Intersection V/C	0.394											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.102	2.717	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	333	333
d_b, Bicycle Delay [s]	31.25	31.25	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	1.956	1.766	2.220	2.036
Bicycle LOS	A	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	163	5	304	17	14	11	0	260	33	503	726	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	163	5	304	17	14	11	0	260	33	503	726	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	1	76	4	4	3	0	65	8	126	182	2
Total Analysis Volume [veh/h]	163	5	304	17	14	11	0	260	33	503	726	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	19	0	9	19	0	27	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	3	3	0	19	19	31	50	50
g / C, Green / Cycle	0.23	0.23	0.04	0.04	0.00	0.22	0.22	0.34	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.10	0.21	0.01	0.02	0.00	0.06	0.06	0.31	0.15	0.15
s, saturation flow rate [veh/h]	1605	1431	1603	1562	1603	3204	1590	1603	3204	1672
c, Capacity [veh/h]	370	330	60	58	1	691	343	543	1776	927
d1, Uniform Delay [s]	29.76	33.84	42.17	42.40	0.00	29.46	29.53	28.66	10.53	10.53
k, delay calibration	0.11	0.18	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	0.87	16.27	2.59	4.98	0.00	1.01	2.13	7.34	0.38	0.72
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
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.92	0.29	0.43	0.00	0.28	0.29	0.93	0.27	0.27
d, Delay for Lane Group [s/veh]	30.63	50.11	44.76	47.38	0.00	30.47	31.66	36.01	10.91	11.26
Lane Group LOS	C	D	D	D	A	C	C	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.16	7.80	0.41	0.62	0.00	1.82	1.98	11.11	2.44	2.63
50th-Percentile Queue Length [ft]	78.95	195.08	10.18	15.47	0.00	45.44	49.43	277.67	60.92	65.83
95th-Percentile Queue Length [veh]	5.68	12.38	0.73	1.11	0.00	3.27	3.56	16.57	4.39	4.74
95th-Percentile Queue Length [ft]	142.11	309.61	18.32	27.85	0.00	81.80	88.98	414.31	109.66	118.50

Movement, Approach, & Intersection Results

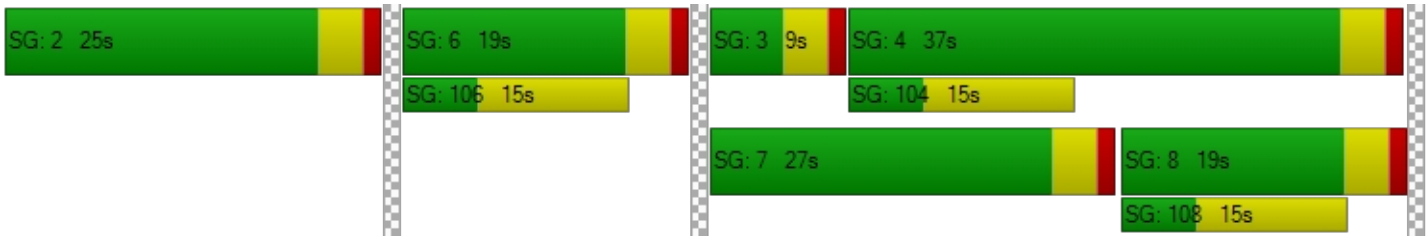
d_M, Delay for Movement [s/veh]	30.63	30.63	50.11	44.76	47.38	47.38	0.00	30.77	31.66	36.01	11.03	11.26
Movement LOS	C	C	D	D	D	D	A	C	C	D	B	B
d_A, Approach Delay [s/veh]	43.18			46.32			30.87			21.18		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.16											
Intersection LOS	C											
Intersection V/C	0.605											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.274	1.960	2.762	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	333	333	733
d_b, Bicycle Delay [s]	26.45	31.25	31.25	18.05
I_b,int, Bicycle LOS Score for Intersection	2.338	1.629	1.721	2.241
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	602	9	474	161	500	909
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]	602	9	474	161	500	909
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	151	2	119	40	125	227
Total Analysis Volume [veh/h]	602	9	474	161	500	909
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	28	0	19	0	43	62
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	28	28	30	62
g / C, Green / Cycle	0.22	0.22	0.31	0.31	0.34	0.69
(v / s)_i Volume / Saturation Flow Rate	0.19	0.19	0.19	0.21	0.31	0.28
s, saturation flow rate [veh/h]	1603	1597	1683	1545	1603	3204
c, Capacity [veh/h]	349	348	525	482	539	2221
d1, Uniform Delay [s]	34.02	34.02	26.23	26.79	28.79	5.91
k, delay calibration	0.14	0.14	0.50	0.50	0.20	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.65	8.70	5.08	6.88	12.45	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.88	0.60	0.66	0.93	0.41
d, Delay for Lane Group [s/veh]	42.68	42.72	31.32	33.67	41.23	6.47
Lane Group LOS	D	D	C	C	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	7.15	7.13	6.33	6.63	11.83	3.20
50th-Percentile Queue Length [ft]	178.77	178.29	158.28	165.74	295.72	79.93
95th-Percentile Queue Length [veh]	11.54	11.51	10.46	10.85	17.47	5.76
95th-Percentile Queue Length [ft]	288.41	287.78	261.44	271.31	436.74	143.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.70	42.72	32.10	33.67	41.23	6.47
Movement LOS	D	D	C	C	D	A
d_A, Approach Delay [s/veh]	42.70		32.50		18.81	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	27.58					
Intersection LOS	C					
Intersection V/C	0.708					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.141	4.656	5.295
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.349

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	1	512	34	183	412	11	3	57	0	246	9	443
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	512	34	183	412	11	3	57	0	246	9	443
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	128	9	46	103	3	1	14	0	62	2	111
Total Analysis Volume [veh/h]	1	512	34	183	412	11	3	57	0	246	9	443
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	11	19	0	0	19	0	0	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	46	46	7	53	53	4	4	17	17	17
g / C, Green / Cycle	0.00	0.51	0.51	0.08	0.58	0.58	0.04	0.04	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.00	0.11	0.11	0.06	0.13	0.13	0.02	0.02	0.15	0.16	0.16
s, saturation flow rate [veh/h]	1603	3204	1630	3113	1683	1668	1675	1532	1603	1439	1431
c, Capacity [veh/h]	3	1623	826	242	980	971	74	68	311	279	277
d1, Uniform Delay [s]	44.85	12.34	12.36	40.66	8.98	8.98	41.90	41.90	34.56	34.72	34.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	49.28	0.32	0.63	4.77	0.51	0.51	3.83	4.16	4.55	5.67	5.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.22	0.22	0.76	0.22	0.22	0.42	0.42	0.79	0.81	0.81
d, Delay for Lane Group [s/veh]	94.13	12.66	12.99	45.43	9.49	9.50	45.73	46.05	39.11	40.38	40.45
Lane Group LOS	F	B	B	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	1.99	2.12	2.12	1.97	1.95	0.75	0.69	5.41	5.08	5.06
50th-Percentile Queue Length [ft]	1.63	49.66	53.02	53.03	49.20	48.85	18.79	17.27	135.34	127.12	126.61
95th-Percentile Queue Length [veh]	0.12	3.58	3.82	3.82	3.54	3.52	1.35	1.24	9.23	8.78	8.76
95th-Percentile Queue Length [ft]	2.94	89.39	95.43	95.46	88.56	87.94	33.82	31.08	230.74	219.58	218.88

Movement, Approach, & Intersection Results

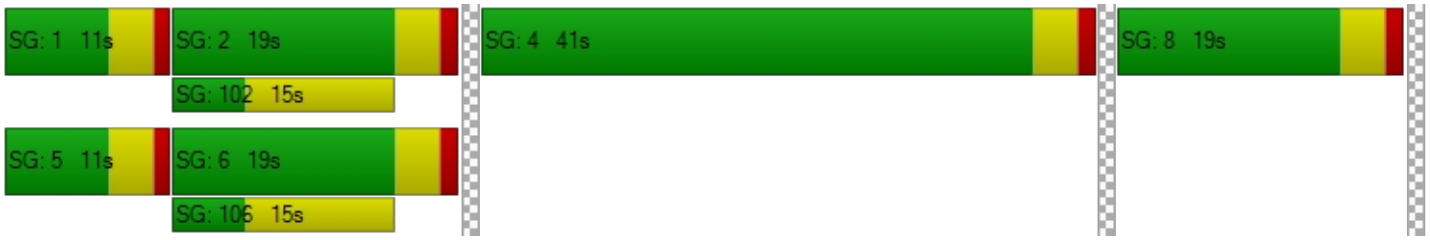
d_M, Delay for Movement [s/veh]	94.13	12.76	12.99	45.43	9.49	9.50	45.73	45.89	46.05	39.11	40.38	40.42
Movement LOS	F	B	B	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	12.92			20.34			45.89			39.96		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	26.19											
Intersection LOS	C											
Intersection V/C	0.349											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.968	2.491
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	333	822
d_b, Bicycle Delay [s]	31.25	31.25	31.25	15.61
l_b,int, Bicycle LOS Score for Intersection	1.860	2.060	1.609	2.711
Bicycle LOS	A	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	594	0	0	1139	0	643	0	108	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	594	0	0	1139	0	643	0	108	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	149	0	0	285	0	161	0	27	0	0	0
Total Analysis Volume [veh/h]	0	594	0	0	1139	0	643	0	108	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	9	28	0	62	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	56	0	60	22	22	
g / C, Green / Cycle	0.62	0.00	0.67	0.25	0.25	
(v / s)_i Volume / Saturation Flow Rate	0.19	0.00	0.25	0.21	0.08	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1986	1	3050	765	352	
d1, Uniform Delay [s]	7.98	0.00	6.71	32.25	27.68	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.39	0.00	0.35	2.58	0.49	
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	0.30	0.00	0.37	0.84	0.31	
d, Delay for Lane Group [s/veh]	8.37	0.00	7.06	34.83	28.17	
Lane Group LOS	A	A	A	C	C	
Critical Lane Group	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	2.51	0.00	2.86	6.75	1.92	
50th-Percentile Queue Length [ft]	62.74	0.00	71.55	168.78	47.88	
95th-Percentile Queue Length [veh]	4.52	0.00	5.15	11.01	3.45	
95th-Percentile Queue Length [ft]	112.93	0.00	128.79	275.31	86.18	

Movement, Approach, & Intersection Results

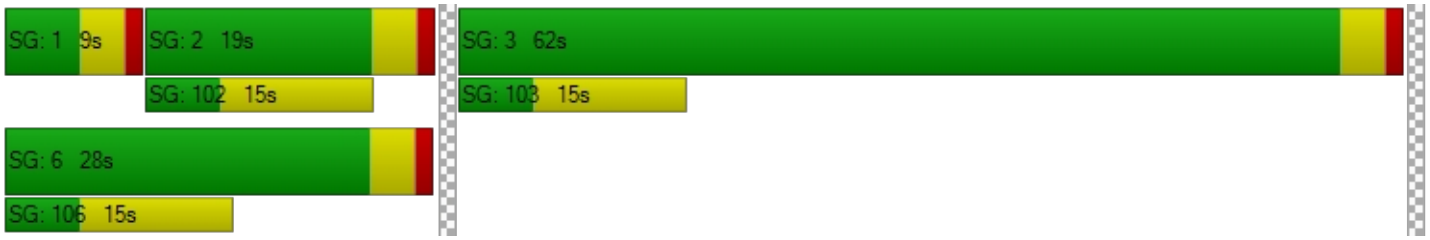
d_M, Delay for Movement [s/veh]	0.00	8.37	0.00	0.00	7.06	0.00	34.83	0.00	28.17	0.00	0.00	0.00
Movement LOS		A		A	A		C		C			
d_A, Approach Delay [s/veh]	8.37			7.06			33.87			0.00		
Approach LOS	A			A			C			A		
d_I, Intersection Delay [s/veh]	15.48											
Intersection LOS	B											
Intersection V/C	0.455											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.741	0.000	2.186	1.716
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	533	0	0
d_b, Bicycle Delay [s]	31.25	24.20	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.050	2.186	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	83	1298	306	56	652	793	185	610	122	146	259	250
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]	83	1298	306	56	652	793	185	610	122	146	259	250
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	325	77	14	163	198	46	153	31	37	65	63
Total Analysis Volume [veh/h]	83	1298	306	56	652	793	185	610	122	146	259	250
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	28	0	16	34	0	0	19	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	34	34	4	32	32	32	19	19	19	19	17	17	17
g / C, Green / Cycle	0.06	0.38	0.38	0.04	0.36	0.36	0.36	0.22	0.22	0.22	0.22	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.21	0.22	0.03	0.14	0.28	0.28	0.12	0.18	0.15	0.15	0.09	0.15	0.10
s, saturation flow rate [veh/h]	1603	6113	1432	1603	4584	1431	1431	1603	1683	1532	1387	1603	1683	2532
c, Capacity [veh/h]	103	2311	541	71	1643	513	513	346	364	331	300	294	309	465
d1, Uniform Delay [s]	41.56	22.09	22.17	42.58	21.60	25.64	25.64	31.26	33.65	32.42	32.49	32.99	35.44	33.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.68	0.99	4.29	17.20	0.72	10.84	10.84	1.28	4.74	2.46	2.83	1.29	6.01	0.97
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.81	0.56	0.57	0.79	0.40	0.77	0.77	0.53	0.82	0.68	0.69	0.50	0.84	0.54
d, Delay for Lane Group [s/veh]	55.24	23.08	26.46	59.79	22.32	36.48	36.48	32.54	38.39	34.88	35.32	34.29	41.45	34.24
Lane Group LOS	E	C	C	E	C	D	D	C	D	C	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	2.19	5.36	5.61	1.56	3.44	8.76	8.76	3.62	6.58	4.64	4.30	2.92	5.88	2.49
50th-Percentile Queue Length [ft]	54.65	133.98	140.15	38.99	86.07	219.0	219.0	90.44	164.4	116.0	107.3	73.04	147.05	62.34
95th-Percentile Queue Length [veh]	3.94	9.16	9.49	2.81	6.20	13.61	13.61	6.51	10.78	8.17	7.69	5.26	9.86	4.49
95th-Percentile Queue Length [ft]	98.38	228.89	237.23	70.18	154.9	340.3	340.3	162.7	269.6	204.3	192.3	131.47	246.49	112.22

Movement, Approach, & Intersection Results

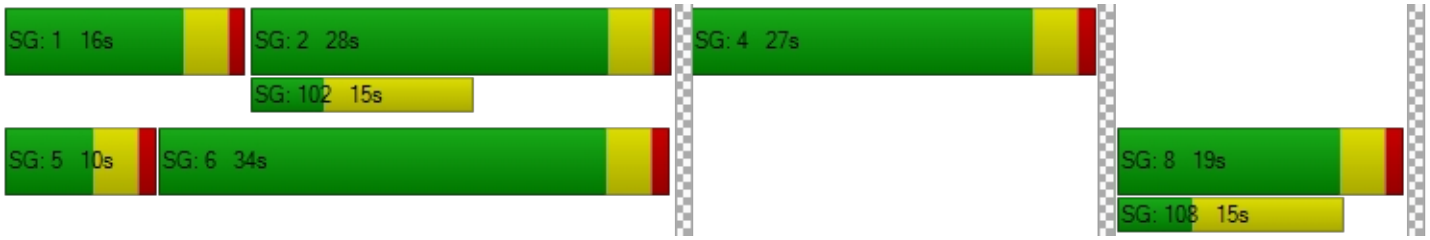
d_M, Delay for Movement [s/veh]	55.24	23.08	26.46	59.79	22.32	36.48	32.54	36.67	35.32	34.29	41.45	34.24
Movement LOS	E	C	C	E	C	D	C	D	D	C	D	C
d_A, Approach Delay [s/veh]	25.28			31.20			35.66			37.10		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.77											
Intersection LOS	C											
Intersection V/C	0.661											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.222	0.000	0.000	2.860
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	667	333	511
d_b, Bicycle Delay [s]	24.20	20.00	31.25	24.94
l_b,int, Bicycle LOS Score for Intersection	2.116	2.179	2.064	2.640
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	4,711.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	10.680

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	0	0	0	32	128	121	0	21	0	0	0
Total Analysis Volume [veh/h]	227	1	0	0	126	510	482	0	84	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	10.68	0.01	0.00	0.00	0.79	0.47	0.30	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	4711.58	4562.27	0.00	0.00	80.82	11.23	8.15	0.00	0.00	7.38	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	28.80	28.80	0.00	0.00	5.06	2.57	1.26	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	720.04	720.04	0.00	0.00	126.60	64.23	31.40	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	4710.93			25.01			6.94			2.46		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	764.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.643

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	219	10	26	21	224	299	156	750	101	296	630	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	219	10	26	21	224	299	156	750	101	296	630	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	3	7	5	56	75	39	188	25	74	158	2
Total Analysis Volume [veh/h]	219	10	26	21	224	299	156	750	101	296	630	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	37	0	14	23	0	11	20	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	21	21	11	32	32	11	33	33
g / C, Green / Cycle	0.10	0.10	0.24	0.24	0.12	0.36	0.36	0.12	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.15	0.21	0.10	0.26	0.26	0.10	0.19	0.19
s, saturation flow rate [veh/h]	1603	1570	1676	1431	1603	1683	1614	3113	1683	1676
c, Capacity [veh/h]	169	165	400	342	188	599	574	381	607	604
d1, Uniform Delay [s]	39.17	39.19	30.53	32.95	38.82	25.17	25.17	38.31	22.71	22.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	6.96	7.21	1.52	7.06	8.90	7.49	7.79	3.45	3.24	3.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.77	0.61	0.87	0.83	0.73	0.73	0.78	0.53	0.53
d, Delay for Lane Group [s/veh]	46.13	46.40	32.04	40.01	47.72	32.66	32.96	41.76	25.95	25.96
Lane Group LOS	D	D	C	D	D	C	C	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.05	3.01	4.74	6.69	3.66	8.58	8.28	3.19	5.43	5.41
50th-Percentile Queue Length [ft]	76.28	75.34	118.49	167.29	91.54	214.51	206.94	79.64	135.70	135.22
95th-Percentile Queue Length [veh]	5.49	5.42	8.31	10.93	6.59	13.38	13.00	5.73	9.25	9.22
95th-Percentile Queue Length [ft]	137.30	135.60	207.75	273.34	164.76	334.61	324.90	143.34	231.22	230.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.24	46.40	46.40	32.04	32.04	40.01	47.72	32.79	32.96	41.76	25.96	25.96
Movement LOS	D	D	D	C	C	D	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	46.27			36.42			35.12			30.97		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	35.00											
Intersection LOS	D											
Intersection V/C	0.643											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.214	2.932	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	733	422	356
d_b, Bicycle Delay [s]	31.25	18.05	28.01	30.42
l_b,int, Bicycle LOS Score for Intersection	1.980	2.457	2.390	2.329
Bicycle LOS	A	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	47.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	99	12	215	32	74	17	34	830	51	602	496	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	12	215	32	74	17	34	830	51	602	496	52
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	3	54	8	19	4	9	208	13	151	124	13
Total Analysis Volume [veh/h]	99	12	215	32	74	17	34	830	51	602	496	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	25	0	27	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	7	7	3	16	16	36	49	49
g / C, Green / Cycle	0.17	0.17	0.07	0.07	0.03	0.18	0.18	0.40	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.07	0.15	0.02	0.06	0.02	0.18	0.18	0.38	0.11	0.11
s, saturation flow rate [veh/h]	1611	1431	1603	1629	1603	3204	1634	1603	3204	1603
c, Capacity [veh/h]	269	238	120	122	53	579	295	641	1755	878
d1, Uniform Delay [s]	33.56	36.78	39.29	40.78	43.00	36.87	36.87	25.96	10.39	10.40
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.14	0.50	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
d2, Incremental Delay [s]	1.02	11.82	1.17	8.62	12.36	38.89	54.98	8.97	0.27	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.90	0.27	0.74	0.64	1.01	1.01	0.94	0.21	0.21
d, Delay for Lane Group [s/veh]	34.58	48.59	40.45	49.40	55.36	75.76	91.84	34.93	10.66	10.94
Lane Group LOS	C	D	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.22	5.32	0.70	2.24	0.92	9.36	10.86	13.26	1.80	1.87
50th-Percentile Queue Length [ft]	55.39	133.10	17.50	56.10	23.04	233.88	271.45	331.60	44.94	46.71
95th-Percentile Queue Length [veh]	3.99	9.11	1.26	4.04	1.66	14.41	16.35	19.24	3.24	3.36
95th-Percentile Queue Length [ft]	99.70	227.71	31.50	100.97	41.47	360.36	408.65	480.92	80.90	84.07

Movement, Approach, & Intersection Results

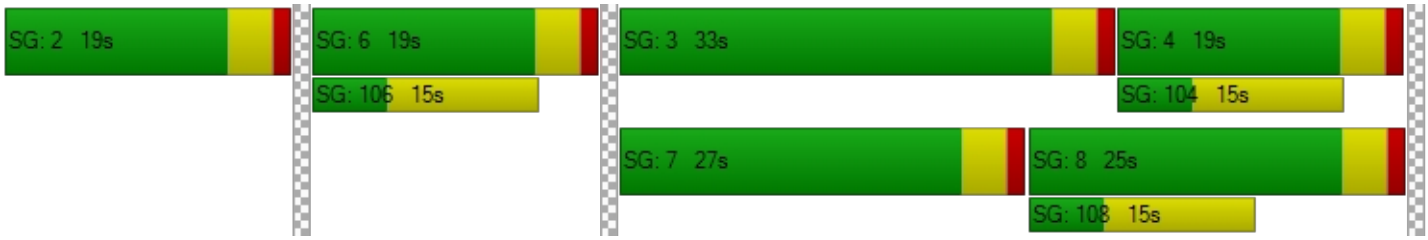
d_M, Delay for Movement [s/veh]	34.58	34.58	48.59	40.45	49.40	49.40	55.36	80.55	91.84	34.93	10.74	10.94
Movement LOS	C	C	D	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	43.82			47.07			80.24			23.41		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	47.90											
Intersection LOS	D											
Intersection V/C	0.764											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.284	2.014	2.808	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	467	333
d_b, Bicycle Delay [s]	31.25	31.25	26.45	31.25
I_b,int, Bicycle LOS Score for Intersection	2.098	1.763	2.063	2.192
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.769

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	451	28	846	241	434	514
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]	451	28	846	241	434	514
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	7	212	60	109	129
Total Analysis Volume [veh/h]	451	28	846	241	434	514
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	37	0	34	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	37	37	26	67
g / C, Green / Cycle	0.17	0.17	0.41	0.41	0.29	0.74
(v / s)_i Volume / Saturation Flow Rate	0.15	0.15	0.32	0.35	0.27	0.16
s, saturation flow rate [veh/h]	1603	1580	1683	1561	1603	3204
c, Capacity [veh/h]	267	263	686	636	469	2385
d1, Uniform Delay [s]	36.79	36.79	23.34	24.25	30.88	3.50
k, delay calibration	0.11	0.11	0.50	0.50	0.31	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.84	10.97	9.14	13.76	19.02	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.90	0.79	0.85	0.93	0.22
d, Delay for Lane Group [s/veh]	47.63	47.75	32.48	38.00	49.90	3.71
Lane Group LOS	D	D	C	D	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	5.90	5.83	11.30	12.36	11.30	1.14
50th-Percentile Queue Length [ft]	147.51	145.68	282.46	308.94	282.55	28.54
95th-Percentile Queue Length [veh]	9.88	9.79	16.81	18.12	16.82	2.05
95th-Percentile Queue Length [ft]	247.10	244.65	420.27	453.07	420.38	51.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.69	47.75	34.46	38.00	49.90	3.71
Movement LOS	D	D	C	D	D	A
d_A, Approach Delay [s/veh]	47.69		35.24		24.86	
Approach LOS	D		D		C	
d_I, Intersection Delay [s/veh]	33.70					
Intersection LOS	C					
Intersection V/C	0.769					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	4.923	5.029	4.915
Bicycle LOS	E	F	E

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.304

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	1	654	35	248	723	18	17	29	14	98	13	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	654	35	248	723	18	17	29	14	98	13	164
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	164	9	62	181	5	4	7	4	25	3	41
Total Analysis Volume [veh/h]	1	654	35	248	723	18	17	29	14	98	13	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	22	0	30	39	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	53	53	10	62	62	4	4	8	8	8
g / C, Green / Cycle	0.00	0.59	0.59	0.11	0.69	0.69	0.04	0.04	0.09	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.14	0.14	0.08	0.22	0.22	0.02	0.02	0.06	0.06	0.06
s, saturation flow rate [veh/h]	1603	3204	1640	3113	1683	1669	1639	1409	1603	1462	1431
c, Capacity [veh/h]	3	1872	958	333	1160	1150	72	62	139	127	124
d1, Uniform Delay [s]	44.84	9.06	9.07	39.00	5.58	5.58	41.92	41.96	39.97	39.97	39.98
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.22	0.31	0.61	3.32	0.73	0.74	4.09	5.18	6.35	6.91	7.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.24	0.24	0.74	0.32	0.32	0.44	0.46	0.70	0.70	0.71
d, Delay for Lane Group [s/veh]	86.05	9.37	9.68	42.31	6.31	6.32	46.01	47.14	46.32	46.87	47.11
Lane Group LOS	F	A	A	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.06	2.06	2.21	2.77	2.56	2.54	0.76	0.70	2.33	2.14	2.11
50th-Percentile Queue Length [ft]	1.53	51.54	55.17	69.36	63.94	63.44	18.95	17.51	58.20	53.53	52.75
95th-Percentile Queue Length [veh]	0.11	3.71	3.97	4.99	4.60	4.57	1.36	1.26	4.19	3.85	3.80
95th-Percentile Queue Length [ft]	2.76	92.78	99.30	124.84	115.08	114.19	34.10	31.52	104.76	96.36	94.94

Movement, Approach, & Intersection Results

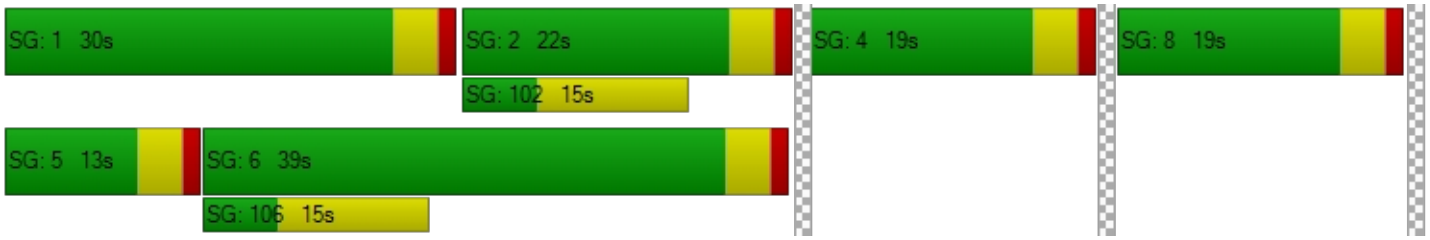
d_M, Delay for Movement [s/veh]	86.05	9.46	9.68	42.31	6.32	6.32	46.01	46.58	47.14	46.32	46.87	47.00
Movement LOS	F	A	A	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	9.59			15.34			46.55			46.75		
Approach LOS	A			B			D			D		
d_I, Intersection Delay [s/veh]	18.59											
Intersection LOS	B											
Intersection V/C	0.304											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.972	2.416
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	778	333	333
d_b, Bicycle Delay [s]	28.80	16.81	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	1.939	2.376	1.609	2.013
Bicycle LOS	A	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1180	311	210	936	0	225	0	27	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1180	311	210	936	0	225	0	27	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	295	78	53	234	0	56	0	7	0	0	0
Total Analysis Volume [veh/h]	0	1180	311	210	936	0	225	0	27	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	34	0	37	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	55	14	73	9	9	
g / C, Green / Cycle	0.62	0.15	0.81	0.10	0.10	
(v / s)_i Volume / Saturation Flow Rate	0.37	0.13	0.20	0.07	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1968	249	3731	303	139	
d1, Uniform Delay [s]	10.60	36.97	1.96	39.52	37.37	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.36	7.68	0.16	3.59	0.67	
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	0.60	0.84	0.25	0.74	0.19	
d, Delay for Lane Group [s/veh]	11.96	44.65	2.12	43.11	38.04	
Lane Group LOS	B	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	6.66	4.94	0.75	2.54	0.57	
50th-Percentile Queue Length [ft]	166.47	123.55	18.67	63.47	14.20	
95th-Percentile Queue Length [veh]	10.89	8.59	1.34	4.57	1.02	
95th-Percentile Queue Length [ft]	272.27	214.70	33.61	114.25	25.55	

Movement, Approach, & Intersection Results

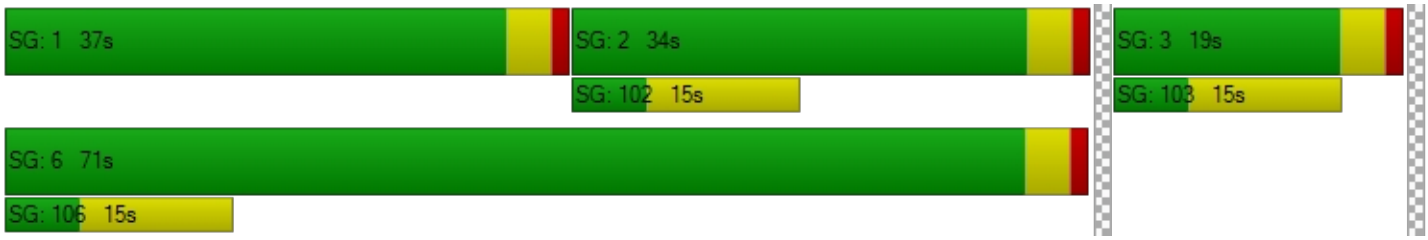
d_M, Delay for Movement [s/veh]	0.00	11.96	0.00	44.65	2.12	0.00	43.11	0.00	38.04	0.00	0.00	0.00
Movement LOS		B		D	A		D		D			
d_A, Approach Delay [s/veh]		11.96			9.92			42.57			0.00	
Approach LOS		B			A			D			A	
d_I, Intersection Delay [s/veh]	14.04											
Intersection LOS	B											
Intersection V/C	0.572											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.756	0.000	2.024	1.819
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	1489	0	0
d_b, Bicycle Delay [s]	20.00	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.533	2.190	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	42.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	45	1222	221	33	1191	302	488	533	425	292	172	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	1222	221	33	1191	302	488	533	425	292	172	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	306	55	8	298	76	122	133	106	73	43	119
Total Analysis Volume [veh/h]	45	1222	221	33	1191	302	488	533	425	292	172	475
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	23	0	11	25	0	0	34	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	20	20	3	19	19	19	33	33	33	33	18	18	18
g / C, Green / Cycle	0.04	0.22	0.22	0.03	0.21	0.21	0.21	0.37	0.37	0.37	0.37	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.19	0.02	0.19	0.19	0.20	0.21	0.21	0.21	0.33	0.18	0.10	0.19
s, saturation flow rate [veh/h]	1603	6113	1481	1603	4584	1663	1431	1603	1649	1532	1302	1603	1683	2532
c, Capacity [veh/h]	61	1336	324	52	977	354	305	595	612	568	483	321	337	506
d1, Uniform Delay [s]	42.84	33.90	34.04	42.99	34.57	34.58	34.63	22.64	22.64	22.64	26.43	35.22	32.08	35.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.14	0.12	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.77	7.74	27.46	11.82	13.98	29.89	34.17	0.88	0.86	0.92	6.91	10.67	1.20	8.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	1.00

Lane Group Results

X, volume / capacity	0.74	0.87	0.88	0.63	0.91	0.91	0.92	0.58	0.58	0.58	0.88	0.91	0.51	0.94
d, Delay for Lane Group [s/veh]	58.61	41.64	61.51	54.82	48.55	64.47	68.80	23.52	23.49	23.56	33.35	45.89	33.28	44.27
Lane Group LOS	E	D	E	D	D	E	E	C	C	C	C	D	C	D
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.25	6.66	8.35	0.89	7.44	9.67	8.73	5.73	5.89	5.48	9.03	7.06	3.39	5.62
50th-Percentile Queue Length [ft]	31.19	166.39	208.84	22.26	186.1	241.7	218.2	143.2	147.2	137.0	225.7	176.54	84.78	140.61
95th-Percentile Queue Length [veh]	2.25	10.89	13.09	1.60	11.92	14.77	13.57	9.66	9.87	9.32	13.96	11.42	6.10	9.51
95th-Percentile Queue Length [ft]	56.14	272.16	327.35	40.06	297.9	369.2	339.3	241.4	246.8	233.0	348.9	285.49	152.61	237.84

Movement, Approach, & Intersection Results

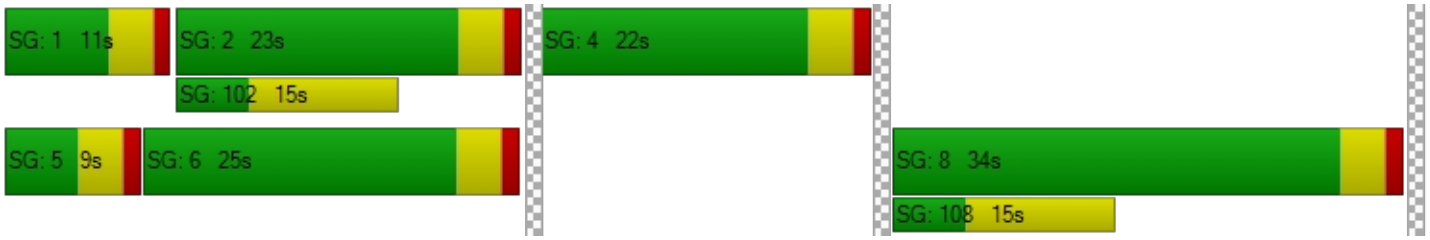
d_M, Delay for Movement [s/veh]	58.61	42.68	61.51	54.82	52.57	68.75	23.51	23.53	33.35	45.89	33.28	44.27
Movement LOS	E	D	E	D	D	E	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	45.96			55.77			26.41			42.76		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	42.94											
Intersection LOS	D											
Intersection V/C	0.738											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.299	0.000	0.000	2.864
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	467	667	400
d_b, Bicycle Delay [s]	28.01	26.45	20.00	28.80
l_b,int, Bicycle LOS Score for Intersection	2.051	2.189	2.355	3.109
Bicycle LOS	B	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	1	0	0	8	17	229	0	89	0	0	0
Total Analysis Volume [veh/h]	165	5	0	0	33	69	917	0	357	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.15	0.00	0.00	1.67	0.06	0.56	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	738.92	8.54	10.06	0.00	0.00	8.00	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	23.92	23.92	0.00	0.00	4.44	0.20	3.74	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	597.89	597.89	0.00	0.00	111.08	5.09	93.45	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			244.84			7.24			2.67		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1121.73											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	215	15	22	7	64	68	301	613	60	266	405	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	215	15	22	7	64	68	301	613	60	266	405	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	4	6	2	16	17	75	153	15	67	101	2
Total Analysis Volume [veh/h]	215	15	22	7	64	68	301	613	60	266	405	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	19	0	33	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	9	6	6	19	48	48	10	39	39
g / C, Green / Cycle	0.10	0.10	0.07	0.07	0.21	0.54	0.54	0.11	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.04	0.05	0.19	0.20	0.20	0.09	0.12	0.12
s, saturation flow rate [veh/h]	1603	1578	1675	1431	1603	1683	1631	3113	1683	1672
c, Capacity [veh/h]	165	163	117	100	340	901	873	355	737	732
d1, Uniform Delay [s]	39.32	39.33	40.68	40.90	34.41	12.18	12.18	38.62	16.23	16.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.29	7.49	5.05	7.97	7.73	1.21	1.25	3.18	0.95	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.77	0.61	0.68	0.89	0.38	0.38	0.75	0.28	0.28
d, Delay for Lane Group [s/veh]	46.61	46.82	45.73	48.87	42.14	13.40	13.43	41.80	17.18	17.19
Lane Group LOS	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.02	3.00	1.66	1.66	6.71	3.75	3.64	2.86	2.67	2.66
50th-Percentile Queue Length [ft]	75.61	74.93	41.45	41.49	167.76	93.64	90.98	71.52	66.76	66.39
95th-Percentile Queue Length [veh]	5.44	5.40	2.98	2.99	10.96	6.74	6.55	5.15	4.81	4.78
95th-Percentile Queue Length [ft]	136.09	134.88	74.61	74.67	273.97	168.56	163.76	128.74	120.18	119.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.70	46.82	46.82	45.73	45.73	48.87	42.14	13.41	13.43	41.80	17.18	17.19
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.72			47.27			22.29			26.83		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.51											
Intersection LOS	C											
Intersection V/C	0.438											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.117	2.787	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	333	333
d_b, Bicycle Delay [s]	31.25	31.25	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	1.975	1.789	2.363	2.120
Bicycle LOS	A	A	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	198	5	304	17	14	11	0	366	35	505	820	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	198	5	304	17	14	11	0	366	35	505	820	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	1	76	4	4	3	0	92	9	126	205	2
Total Analysis Volume [veh/h]	198	5	304	17	14	11	0	366	35	505	820	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	25	0	0	19	0	9	19	0	27	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	3	3	0	19	19	31	50	50
g / C, Green / Cycle	0.23	0.23	0.04	0.04	0.00	0.21	0.21	0.34	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.13	0.21	0.01	0.02	0.00	0.08	0.08	0.32	0.17	0.17
s, saturation flow rate [veh/h]	1605	1431	1603	1562	1603	3204	1610	1603	3204	1674
c, Capacity [veh/h]	370	330	60	58	1	687	345	545	1776	927
d1, Uniform Delay [s]	30.50	33.83	42.17	42.40	0.00	30.27	30.34	28.61	10.78	10.78
k, delay calibration	0.11	0.18	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	1.27	16.25	2.59	4.98	0.00	1.63	3.35	7.35	0.45	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.92	0.29	0.43	0.00	0.39	0.39	0.93	0.31	0.31
d, Delay for Lane Group [s/veh]	31.77	50.08	44.76	47.38	0.00	31.91	33.69	35.95	11.23	11.63
Lane Group LOS	C	D	D	D	A	C	C	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.93	7.80	0.41	0.62	0.00	2.57	2.81	11.15	2.81	3.05
50th-Percentile Queue Length [ft]	98.27	195.02	10.18	15.47	0.00	64.33	70.32	278.65	70.37	76.15
95th-Percentile Queue Length [veh]	7.08	12.38	0.73	1.11	0.00	4.63	5.06	16.62	5.07	5.48
95th-Percentile Queue Length [ft]	176.88	309.53	18.32	27.85	0.00	115.79	126.57	415.54	126.67	137.06

Movement, Approach, & Intersection Results

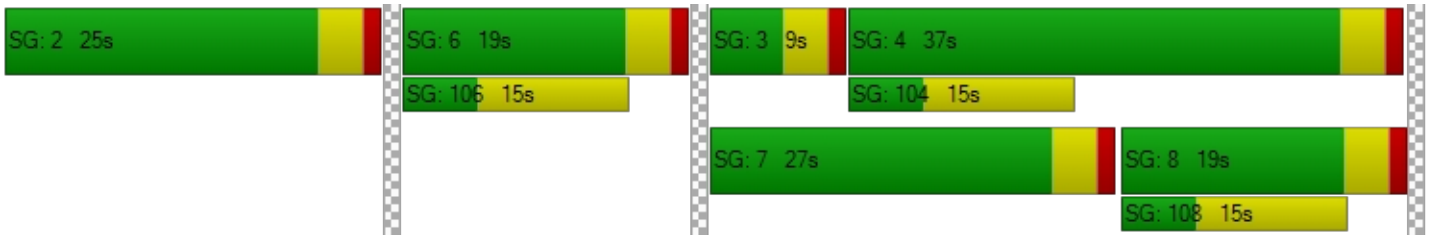
d_M, Delay for Movement [s/veh]	31.77	31.77	50.08	44.76	47.38	47.38	0.00	32.40	33.69	35.95	11.36	11.63
Movement LOS	C	C	D	D	D	D	A	C	C	D	B	B
d_A, Approach Delay [s/veh]	42.75			46.32			32.51			20.67		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.12											
Intersection LOS	C											
Intersection V/C	0.628											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.287	1.960	2.795	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	467	333	333	733
d_b, Bicycle Delay [s]	26.45	31.25	31.25	18.05
I_b,int, Bicycle LOS Score for Intersection	2.396	1.629	1.780	2.293
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	632	9	485	161	500	930
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]	632	9	485	161	500	930
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	158	2	121	40	125	233
Total Analysis Volume [veh/h]	632	9	485	161	500	930
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	28	0	19	0	43	62
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	20	27	27	30	62
g / C, Green / Cycle	0.23	0.23	0.30	0.30	0.34	0.69
(v / s)_i Volume / Saturation Flow Rate	0.20	0.20	0.19	0.21	0.31	0.29
s, saturation flow rate [veh/h]	1603	1597	1683	1547	1603	3204
c, Capacity [veh/h]	363	362	512	470	539	2194
d1, Uniform Delay [s]	33.68	33.68	26.98	27.56	28.80	6.30
k, delay calibration	0.16	0.16	0.50	0.50	0.21	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.07	10.12	5.82	7.95	12.87	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.89	0.63	0.69	0.93	0.42
d, Delay for Lane Group [s/veh]	43.75	43.81	32.81	35.51	41.67	6.90
Lane Group LOS	D	D	C	D	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	7.63	7.61	6.62	6.96	11.89	3.45
50th-Percentile Queue Length [ft]	190.64	190.21	165.52	173.89	297.36	86.18
95th-Percentile Queue Length [veh]	12.15	12.13	10.84	11.28	17.55	6.20
95th-Percentile Queue Length [ft]	303.86	303.31	271.02	282.02	438.76	155.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.78	43.81	33.71	35.51	41.67	6.90
Movement LOS	D	D	C	D	D	A
d_A, Approach Delay [s/veh]	43.78		34.16		19.06	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	28.48					
Intersection LOS	C					
Intersection V/C	0.721					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.190	4.665	5.312
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	26.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.375

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	1	537	34	189	423	11	3	57	0	246	9	498
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	537	34	189	423	11	3	57	0	246	9	498
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	134	9	47	106	3	1	14	0	62	2	125
Total Analysis Volume [veh/h]	1	537	34	189	423	11	3	57	0	246	9	498
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	11	19	0	0	19	0	0	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	44	44	7	51	51	4	4	19	19	19
g / C, Green / Cycle	0.00	0.49	0.49	0.08	0.56	0.56	0.04	0.04	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.12	0.06	0.13	0.13	0.02	0.02	0.15	0.18	0.18
s, saturation flow rate [veh/h]	1603	3204	1633	3113	1683	1668	1675	1532	1603	1438	1431
c, Capacity [veh/h]	3	1560	795	242	947	939	74	68	342	307	305
d1, Uniform Delay [s]	44.85	13.43	13.45	40.75	9.89	9.89	41.90	41.90	32.88	33.81	33.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	49.28	0.37	0.73	5.42	0.57	0.57	3.83	4.16	2.84	5.66	5.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.24	0.24	0.78	0.23	0.23	0.42	0.42	0.72	0.83	0.83
d, Delay for Lane Group [s/veh]	94.13	13.80	14.18	46.17	10.45	10.46	45.73	46.05	35.73	39.46	39.55
Lane Group LOS	F	B	B	D	B	B	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	2.20	2.35	2.21	2.16	2.14	0.75	0.69	5.15	5.66	5.64
50th-Percentile Queue Length [ft]	1.63	54.99	58.72	55.29	53.94	53.56	18.79	17.27	128.69	141.49	141.11
95th-Percentile Queue Length [veh]	0.12	3.96	4.23	3.98	3.88	3.86	1.35	1.24	8.87	9.56	9.54
95th-Percentile Queue Length [ft]	2.94	98.98	105.70	99.52	97.08	96.41	33.82	31.08	221.71	239.03	238.52

Movement, Approach, & Intersection Results

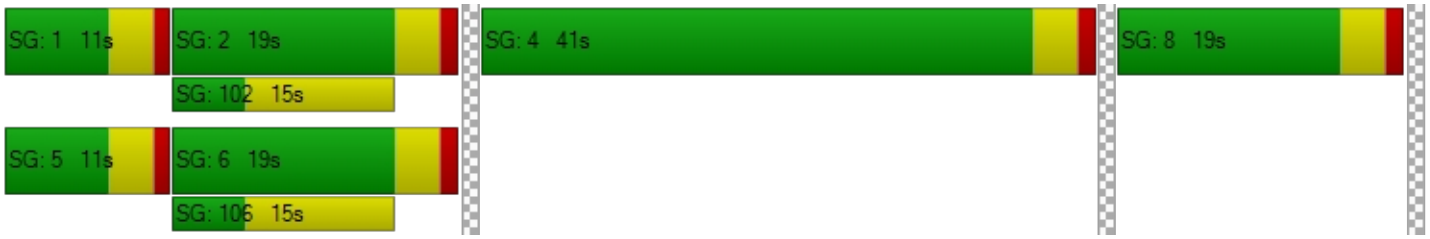
d_M, Delay for Movement [s/veh]	94.13	13.91	14.18	46.17	10.46	10.46	45.73	45.89	46.05	35.73	39.46	39.51
Movement LOS	F	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	14.07			21.29			45.89			38.27		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	26.34											
Intersection LOS	C											
Intersection V/C	0.375											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.968	2.503
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	333	822
d_b, Bicycle Delay [s]	31.25	31.25	31.25	15.61
l_b,int, Bicycle LOS Score for Intersection	1.874	2.074	1.609	2.802
Bicycle LOS	A	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	630	122	108	1158	0	690	0	108	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	630	122	108	1158	0	690	0	108	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	158	31	27	290	0	173	0	27	0	0	0
Total Analysis Volume [veh/h]	0	630	122	108	1158	0	690	0	108	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	19	0	9	28	0	62	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	50	5	59	23	23	
g / C, Green / Cycle	0.55	0.06	0.65	0.26	0.26	
(v / s)_i Volume / Saturation Flow Rate	0.20	0.07	0.25	0.22	0.08	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1761	89	2978	814	374	
d1, Uniform Delay [s]	11.37	42.50	7.39	31.53	26.54	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.57	116.28	0.38	2.56	0.42	
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	0.36	1.21	0.39	0.85	0.29	
d, Delay for Lane Group [s/veh]	11.93	158.78	7.78	34.09	26.96	
Lane Group LOS	B	F	A	C	C	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	3.42	4.83	3.13	7.20	1.86	
50th-Percentile Queue Length [ft]	85.46	120.76	78.36	179.99	46.62	
95th-Percentile Queue Length [veh]	6.15	8.69	5.64	11.60	3.36	
95th-Percentile Queue Length [ft]	153.83	217.37	141.05	290.00	83.92	

Movement, Approach, & Intersection Results

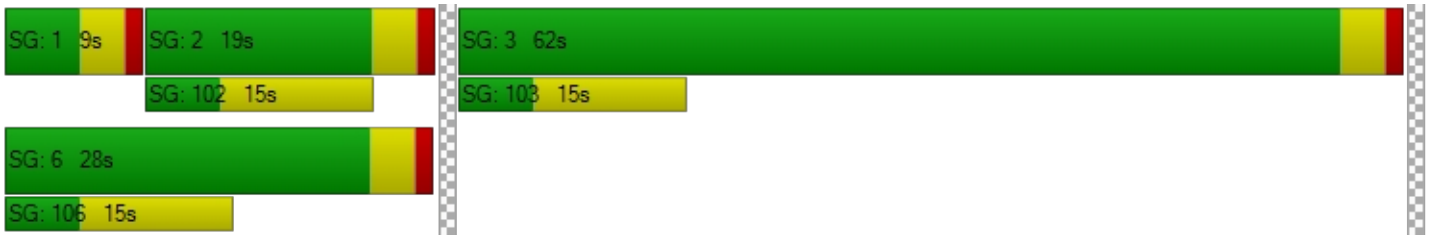
d_M, Delay for Movement [s/veh]	0.00	11.93	0.00	158.78	7.78	0.00	34.09	0.00	26.96	0.00	0.00	0.00
Movement LOS		B		F	A		C		C			
d_A, Approach Delay [s/veh]		11.93			20.66			33.12			0.00	
Approach LOS		B			C			C			A	
d_I, Intersection Delay [s/veh]	22.31											
Intersection LOS	C											
Intersection V/C	0.486											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.744	0.000	2.201	1.769
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	533	0	0
d_b, Bicycle Delay [s]	31.25	24.20	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.079	2.256	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	83	1321	306	56	664	794	187	612	122	146	260	250
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]	83	1321	306	56	664	794	187	612	122	146	260	250
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	330	77	14	166	199	47	153	31	37	65	63
Total Analysis Volume [veh/h]	83	1321	306	56	664	794	187	612	122	146	260	250
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	28	0	16	34	0	0	19	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	34	34	4	32	32	32	19	19	19	19	17	17	17
g / C, Green / Cycle	0.06	0.38	0.38	0.04	0.36	0.36	0.36	0.22	0.22	0.22	0.22	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.05	0.22	0.22	0.03	0.14	0.28	0.28	0.12	0.18	0.15	0.15	0.09	0.15	0.10
s, saturation flow rate [veh/h]	1603	6113	1435	1603	4584	1431	1431	1603	1683	1532	1388	1603	1683	2532
c, Capacity [veh/h]	103	2307	542	71	1639	512	512	347	364	331	300	295	310	466
d1, Uniform Delay [s]	41.56	22.22	22.30	42.58	21.72	25.70	25.70	31.29	33.64	32.43	32.51	32.95	35.42	33.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.68	1.03	4.43	17.20	0.75	10.99	10.99	1.31	4.73	2.49	2.85	1.28	6.02	0.96
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.81	0.57	0.58	0.79	0.41	0.78	0.78	0.54	0.82	0.68	0.69	0.49	0.84	0.54
d, Delay for Lane Group [s/veh]	55.24	23.25	26.74	59.79	22.46	36.70	36.70	32.60	38.37	34.92	35.36	34.23	41.44	34.19
Lane Group LOS	E	C	C	E	C	D	D	C	D	C	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	2.19	5.47	5.73	1.56	3.52	8.80	8.80	3.66	6.58	4.66	4.32	2.92	5.90	2.49
50th-Percentile Queue Length [ft]	54.65	136.64	143.23	38.99	88.07	220.0	220.0	91.56	164.4	116.6	107.9	72.97	147.62	62.29
95th-Percentile Queue Length [veh]	3.94	9.30	9.65	2.81	6.34	13.67	13.67	6.59	10.78	8.21	7.73	5.25	9.89	4.48
95th-Percentile Queue Length [ft]	98.38	232.49	241.37	70.18	158.5	341.6	341.6	164.8	269.6	205.1	193.1	131.34	247.25	112.12

Movement, Approach, & Intersection Results

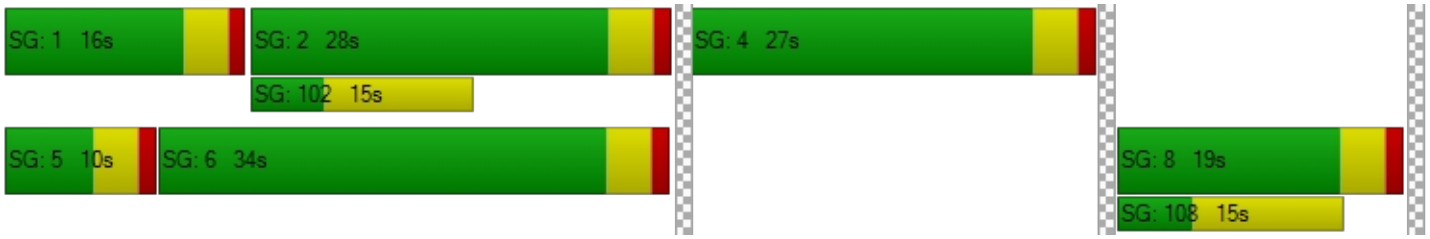
d_M, Delay for Movement [s/veh]	55.24	23.27	26.74	59.79	22.46	36.70	32.60	36.67	35.36	34.23	41.44	34.19
Movement LOS	E	C	C	E	C	D	C	D	D	C	D	C
d_A, Approach Delay [s/veh]	25.44			31.31			35.67			37.07		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.84											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.226	0.000	0.000	2.860
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	667	333	511
d_b, Bicycle Delay [s]	24.20	20.00	31.25	24.94
l_b,int, Bicycle LOS Score for Intersection	2.124	2.184	2.066	2.642
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	5,462.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	12.240

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	0	0	0	32	128	123	0	21	0	0	0
Total Analysis Volume [veh/h]	227	1	0	0	126	510	493	0	84	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	12.24	0.01	0.00	0.00	0.82	0.47	0.30	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	5462.35	5289.10	0.00	0.00	88.99	11.23	8.18	0.00	0.00	7.38	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	29.11	29.11	0.00	0.00	5.35	2.57	1.30	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	727.75	727.75	0.00	0.00	133.68	64.23	32.42	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	5461.59			26.63			6.99			2.46		
Approach LOS	F			D			A			A		
d_I, Intersection Delay [s/veh]	878.71											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	90.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	219	10	48	21	264	339	232	1062	101	446	860	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	219	10	48	21	264	339	232	1062	101	446	860	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	3	12	5	66	85	58	266	25	112	215	2
Total Analysis Volume [veh/h]	219	10	48	21	264	339	232	1062	101	446	860	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	37	0	14	23	0	11	20	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	24	24	15	24	24	16	25	25
g / C, Green / Cycle	0.11	0.11	0.27	0.27	0.17	0.27	0.27	0.17	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.17	0.24	0.14	0.35	0.35	0.14	0.26	0.26
s, saturation flow rate [veh/h]	1603	1543	1677	1431	1603	1683	1632	3113	1683	1678
c, Capacity [veh/h]	179	173	447	381	265	456	442	539	469	467
d1, Uniform Delay [s]	38.91	38.93	29.17	31.73	36.66	32.81	32.81	35.92	31.57	31.57
k, delay calibration	0.11	0.11	0.11	0.14	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.33	7.81	1.52	8.71	8.91	146.97	150.48	3.34	26.70	26.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.79	0.64	0.89	0.88	1.29	1.30	0.83	0.93	0.93
d, Delay for Lane Group [s/veh]	46.24	46.74	30.68	40.44	45.57	179.79	183.30	39.26	58.26	58.37
Lane Group LOS	D	D	C	D	D	F	F	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.34	3.26	5.42	7.69	5.34	27.78	27.38	4.70	11.95	11.93
50th-Percentile Queue Length [ft]	83.62	81.59	135.42	192.18	133.60	694.58	684.44	117.42	298.73	298.32
95th-Percentile Queue Length [veh]	6.02	5.87	9.23	12.23	9.14	41.82	41.37	8.25	17.62	17.60
95th-Percentile Queue Length [ft]	150.52	146.86	230.84	305.86	228.39	1045.39	1034.15	206.27	440.46	439.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.42	46.74	46.74	30.68	30.68	40.44	45.57	181.35	183.30	39.26	58.32	58.37
Movement LOS	D	D	D	C	C	D	D	F	F	D	E	E
d_A, Approach Delay [s/veh]	46.48			35.98			158.91			51.84		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	90.07											
Intersection LOS	F											
Intersection V/C	0.820											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.273	3.124	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	733	422	356
d_b, Bicycle Delay [s]	31.25	18.05	28.01	30.42
l_b,int, Bicycle LOS Score for Intersection	2.017	2.589	2.710	2.643
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	96.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.825

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	200	12	215	32	74	17	34	1103	64	605	707	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	12	215	32	74	17	34	1103	64	605	707	52
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	3	54	8	19	4	9	276	16	151	177	13
Total Analysis Volume [veh/h]	200	12	215	32	74	17	34	1103	64	605	707	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	25	0	27	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	7	7	3	16	16	36	49	49
g / C, Green / Cycle	0.17	0.17	0.07	0.07	0.03	0.18	0.18	0.40	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.13	0.15	0.02	0.06	0.02	0.24	0.24	0.38	0.16	0.16
s, saturation flow rate [veh/h]	1607	1431	1603	1629	1603	3204	1636	1603	3204	1625
c, Capacity [veh/h]	268	238	120	122	53	573	293	644	1755	890
d1, Uniform Delay [s]	36.00	36.78	39.29	40.78	43.00	36.95	36.95	25.89	10.93	10.93
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.14	0.50	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
d2, Incremental Delay [s]	5.22	11.82	1.17	8.62	12.36	167.41	177.58	9.09	0.41	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.90	0.27	0.74	0.64	1.35	1.35	0.94	0.29	0.29
d, Delay for Lane Group [s/veh]	41.22	48.59	40.45	49.40	55.36	204.36	214.52	34.98	11.34	11.74
Lane Group LOS	D	D	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.77	5.32	0.70	2.24	0.92	19.50	20.74	13.34	2.61	2.75
50th-Percentile Queue Length [ft]	119.30	133.10	17.50	56.10	23.04	487.52	518.53	333.53	65.32	68.72
95th-Percentile Queue Length [veh]	8.35	9.11	1.26	4.04	1.66	30.47	32.19	19.33	4.70	4.95
95th-Percentile Queue Length [ft]	208.86	227.71	31.50	100.97	41.47	761.84	804.67	483.29	117.58	123.69

Movement, Approach, & Intersection Results

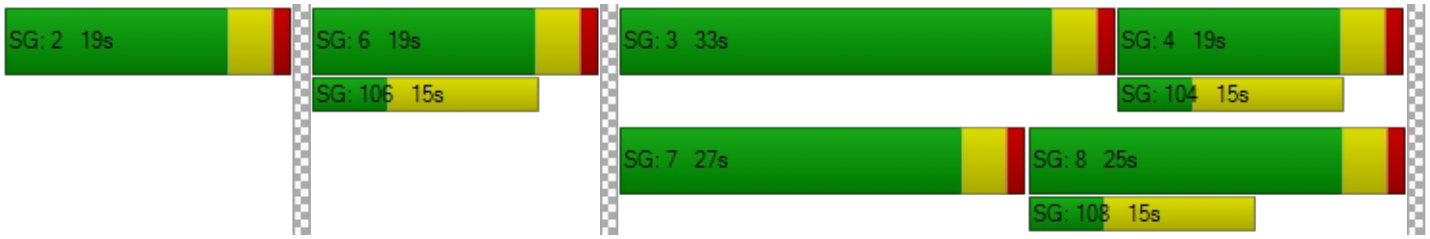
d_M, Delay for Movement [s/veh]	41.22	41.22	48.59	40.45	49.40	49.40	55.36	207.41	214.52	34.98	11.46	11.74
Movement LOS	D	D	D	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	44.93			47.07			203.48			21.90		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	96.06											
Intersection LOS	F											
Intersection V/C	0.825											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.322	2.014	2.891	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	467	333
d_b, Bicycle Delay [s]	31.25	31.25	26.45	31.25
l_b,int, Bicycle LOS Score for Intersection	2.264	1.763	2.220	2.310
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	35.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	468	28	887	241	434	551
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]	468	28	887	241	434	551
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	7	222	60	109	138
Total Analysis Volume [veh/h]	468	28	887	241	434	551
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	37	0	34	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	37	37	26	67
g / C, Green / Cycle	0.17	0.17	0.41	0.41	0.29	0.74
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.34	0.36	0.27	0.17
s, saturation flow rate [veh/h]	1603	1581	1683	1565	1603	3204
c, Capacity [veh/h]	267	264	686	638	469	2385
d1, Uniform Delay [s]	37.02	37.02	23.77	24.71	30.88	3.55
k, delay calibration	0.11	0.11	0.50	0.50	0.31	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.08	14.23	10.73	16.44	19.02	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.93	0.82	0.88	0.93	0.23
d, Delay for Lane Group [s/veh]	51.10	51.24	34.50	41.15	49.90	3.78
Lane Group LOS	D	D	C	D	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	6.35	6.28	12.14	13.41	11.30	1.24
50th-Percentile Queue Length [ft]	158.84	156.96	303.57	335.25	282.55	31.03
95th-Percentile Queue Length [veh]	10.49	10.39	17.86	19.42	16.82	2.23
95th-Percentile Queue Length [ft]	262.18	259.69	446.44	485.39	420.38	55.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.17	51.24	36.92	41.15	49.90	3.78
Movement LOS	D	D	D	D	D	A
d_A, Approach Delay [s/veh]	51.17		37.82		24.10	
Approach LOS	D		D		C	
d_I, Intersection Delay [s/veh]	35.18					
Intersection LOS	D					
Intersection V/C	0.787					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	4.951	5.063	4.945
Bicycle LOS	E	F	E

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.377

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	1	698	35	273	764	18	17	29	14	98	13	323
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	698	35	273	764	18	17	29	14	98	13	323
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	175	9	68	191	5	4	7	4	25	3	81
Total Analysis Volume [veh/h]	1	698	35	273	764	18	17	29	14	98	13	323
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	22	0	30	39	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	47	47	10	57	57	4	4	13	13	13
g / C, Green / Cycle	0.00	0.52	0.52	0.12	0.64	0.64	0.04	0.04	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.00	0.15	0.15	0.09	0.23	0.23	0.02	0.02	0.06	0.12	0.12
s, saturation flow rate [veh/h]	1603	3204	1642	3113	1683	1669	1639	1409	1603	1447	1431
c, Capacity [veh/h]	3	1675	858	359	1070	1061	72	62	225	203	200
d1, Uniform Delay [s]	44.84	12.08	12.09	38.60	7.78	7.78	41.92	41.96	35.44	37.67	37.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.22	0.44	0.86	3.33	0.97	0.98	4.09	5.18	1.33	8.60	8.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.29	0.29	0.76	0.37	0.37	0.44	0.46	0.44	0.83	0.83
d, Delay for Lane Group [s/veh]	86.05	12.52	12.95	41.92	8.75	8.76	46.01	47.14	36.77	46.27	46.36
Lane Group LOS	F	B	B	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.06	2.67	2.86	3.04	3.46	3.44	0.76	0.70	2.03	4.05	4.00
50th-Percentile Queue Length [ft]	1.53	66.82	71.47	76.12	86.54	85.91	18.95	17.51	50.65	101.13	100.10
95th-Percentile Queue Length [veh]	0.11	4.81	5.15	5.48	6.23	6.19	1.36	1.26	3.65	7.28	7.21
95th-Percentile Queue Length [ft]	2.76	120.28	128.64	137.01	155.78	154.63	34.10	31.52	91.18	182.03	180.19

Movement, Approach, & Intersection Results

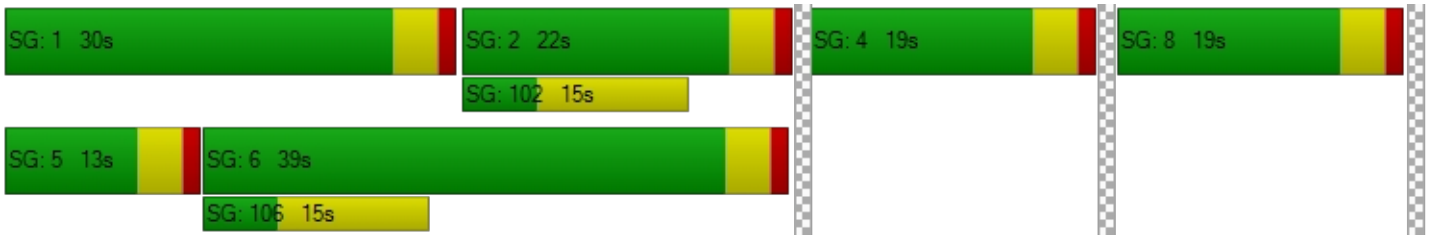
d_M, Delay for Movement [s/veh]	86.05	12.65	12.95	41.92	8.76	8.76	46.01	46.58	47.14	36.77	46.27	46.32
Movement LOS	F	B	B	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	12.76			17.34			46.55			44.16		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	21.74											
Intersection LOS	C											
Intersection V/C	0.377											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.972	2.452
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	400	778	333	333
d_b, Bicycle Delay [s]	28.80	16.81	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	1.963	2.430	1.609	2.276
Bicycle LOS	A	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1236	311	301	1000	0	251	0	27	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1236	311	301	1000	0	251	0	27	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	309	78	75	250	0	63	0	7	0	0	0
Total Analysis Volume [veh/h]	0	1236	311	301	1000	0	251	0	27	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	34	0	37	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	49	19	73	9	9	
g / C, Green / Cycle	0.55	0.21	0.81	0.11	0.11	
(v / s)_i Volume / Saturation Flow Rate	0.39	0.19	0.22	0.08	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1760	339	3693	329	151	
d1, Uniform Delay [s]	14.89	34.42	2.18	39.15	36.69	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.37	7.77	0.18	3.69	0.56	
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	0.70	0.89	0.27	0.76	0.18	
d, Delay for Lane Group [s/veh]	17.26	42.19	2.36	42.84	37.25	
Lane Group LOS	B	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	9.00	6.97	0.90	2.83	0.56	
50th-Percentile Queue Length [ft]	225.00	174.24	22.56	70.70	13.99	
95th-Percentile Queue Length [veh]	13.92	11.30	1.62	5.09	1.01	
95th-Percentile Queue Length [ft]	348.00	282.48	40.61	127.25	25.18	

Movement, Approach, & Intersection Results

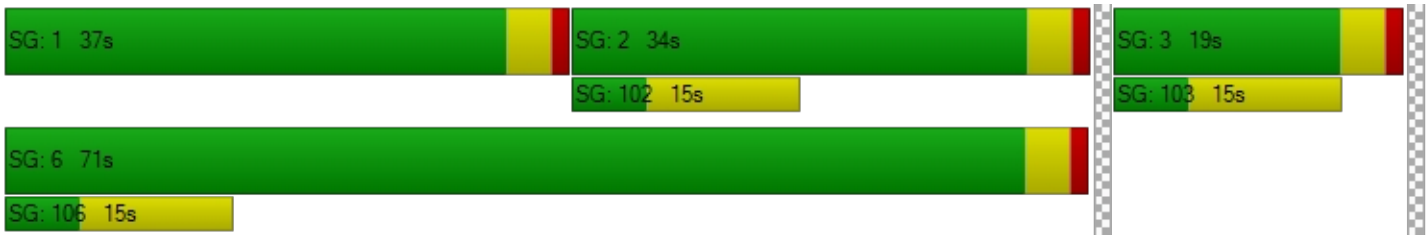
d_M, Delay for Movement [s/veh]	0.00	17.26	0.00	42.19	2.36	0.00	42.84	0.00	37.25	0.00	0.00	0.00
Movement LOS		B		D	A		D		D			
d_A, Approach Delay [s/veh]	17.26			11.58			42.29			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	17.10											
Intersection LOS	B											
Intersection V/C	0.654											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.762	0.000	2.032	1.863
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	1489	0	0
d_b, Bicycle Delay [s]	20.00	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.579	2.275	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	45.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.745

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	45	1271	221	33	1244	309	494	534	425	292	174	475
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	1271	221	33	1244	309	494	534	425	292	174	475
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	318	55	8	311	77	124	134	106	73	44	119
Total Analysis Volume [veh/h]	45	1271	221	33	1244	309	494	534	425	292	174	475
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	23	0	11	25	0	0	34	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	20	20	3	19	19	19	33	33	33	33	18	18	18
g / C, Green / Cycle	0.04	0.22	0.22	0.03	0.21	0.21	0.21	0.37	0.37	0.37	0.37	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.03	0.20	0.20	0.02	0.20	0.20	0.20	0.21	0.21	0.21	0.33	0.18	0.10	0.19
s, saturation flow rate [veh/h]	1603	6113	1487	1603	4584	1667	1431	1603	1648	1532	1302	1603	1683	2532
c, Capacity [veh/h]	61	1335	325	52	976	355	305	595	612	568	483	321	337	506
d1, Uniform Delay [s]	42.84	34.18	34.32	42.99	34.93	34.93	34.97	22.67	22.67	22.67	26.42	35.22	32.12	35.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.14	0.12	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.77	9.65	31.61	11.82	18.73	36.38	40.90	0.90	0.87	0.94	6.89	10.67	1.23	8.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	1.00

Lane Group Results

X, volume / capacity	0.74	0.90	0.91	0.63	0.95	0.95	0.95	0.58	0.58	0.58	0.88	0.91	0.52	0.94
d, Delay for Lane Group [s/veh]	58.61	43.83	65.93	54.82	53.66	71.31	75.87	23.56	23.54	23.60	33.31	45.89	33.35	44.27
Lane Group LOS	E	D	E	D	D	E	E	C	C	C	C	D	C	D
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.25	7.08	8.99	0.89	8.19	10.67	9.58	5.78	5.94	5.53	9.02	7.06	3.44	5.62
50th-Percentile Queue Length [ft]	31.19	177.04	224.80	22.26	204.6	266.7	239.4	144.5	148.5	138.2	225.5	176.54	85.91	140.61
95th-Percentile Queue Length [veh]	2.25	11.45	13.91	1.60	12.88	16.03	14.65	9.72	9.94	9.39	13.95	11.42	6.19	9.51
95th-Percentile Queue Length [ft]	56.14	286.15	347.74	40.06	321.9	400.6	366.3	243.1	248.4	234.6	348.7	285.49	154.64	237.84

Movement, Approach, & Intersection Results

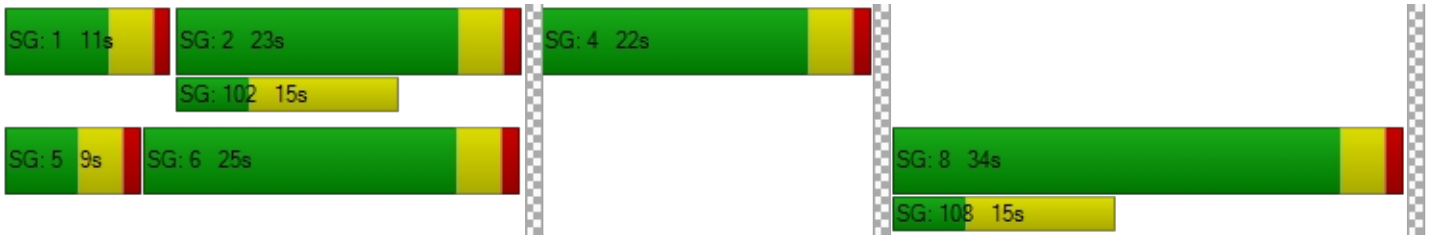
d_M, Delay for Movement [s/veh]	58.61	45.13	65.93	54.82	58.18	75.87	23.55	23.58	33.31	45.89	33.35	44.27
Movement LOS	E	D	E	D	E	E	C	C	C	D	C	D
d_A, Approach Delay [s/veh]	48.51			61.50			26.42			42.76		
Approach LOS	D			E			C			D		
d_I, Intersection Delay [s/veh]	45.44											
Intersection LOS	D											
Intersection V/C	0.745											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.309	0.000	0.000	2.864
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	422	467	667	400
d_b, Bicycle Delay [s]	28.01	26.45	20.00	28.80
l_b,int, Bicycle LOS Score for Intersection	2.067	2.214	2.359	3.112
Bicycle LOS	B	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	1	0	0	8	17	240	0	89	0	0	0
Total Analysis Volume [veh/h]	165	5	0	0	33	69	958	0	357	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.18	0.00	0.00	2.00	0.06	0.59	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	946.32	8.54	10.36	0.00	0.00	8.00	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	23.92	23.92	0.00	0.00	4.70	0.20	4.12	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	597.89	597.89	0.00	0.00	117.46	5.09	102.93	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			311.94			7.55			2.67		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1097.51											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	29.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.432

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	252	16	11	7	61	65	293	504	67	240	383	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	16	11	7	61	65	293	504	67	240	383	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	4	3	2	15	16	73	126	17	60	96	2
Total Analysis Volume [veh/h]	252	16	11	7	61	65	293	504	67	240	383	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	35	0	17	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	6	6	19	49	49	9	39	39
g / C, Green / Cycle	0.11	0.11	0.07	0.07	0.21	0.54	0.54	0.10	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.04	0.05	0.18	0.17	0.17	0.08	0.12	0.12
s, saturation flow rate [veh/h]	1603	1596	1674	1431	1603	1683	1615	3113	1683	1669
c, Capacity [veh/h]	178	177	113	97	332	907	870	326	734	728
d1, Uniform Delay [s]	38.95	38.95	40.77	40.97	34.62	11.58	11.58	39.09	16.20	16.20
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.39	7.44	5.00	7.77	7.68	0.94	0.98	3.26	0.89	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.79	0.60	0.67	0.88	0.32	0.32	0.74	0.27	0.27
d, Delay for Lane Group [s/veh]	46.34	46.40	45.76	48.74	42.30	12.51	12.55	42.35	17.09	17.10
Lane Group LOS	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.33	3.32	1.59	1.59	6.54	3.03	2.92	2.60	2.52	2.51
50th-Percentile Queue Length [ft]	83.17	82.96	39.75	39.64	163.47	75.82	73.03	64.88	63.04	62.64
95th-Percentile Queue Length [veh]	5.99	5.97	2.86	2.85	10.73	5.46	5.26	4.67	4.54	4.51
95th-Percentile Queue Length [ft]	149.71	149.32	71.55	71.34	268.31	136.48	131.46	116.78	113.47	112.74

Movement, Approach, & Intersection Results

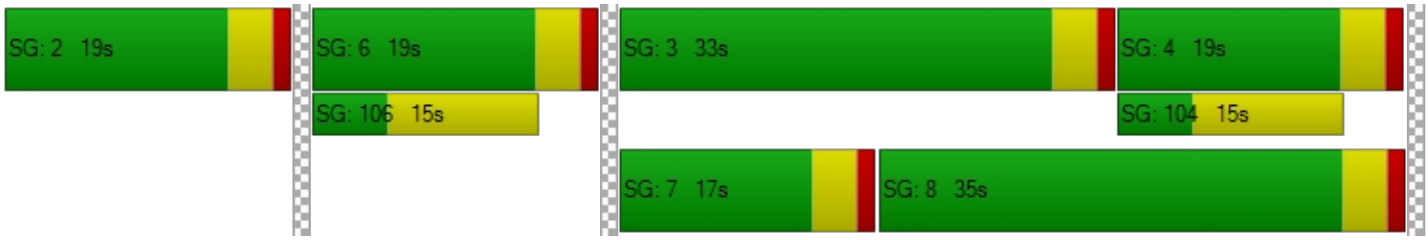
d_M, Delay for Movement [s/veh]	46.37	46.40	46.40	45.76	45.76	48.74	42.30	12.53	12.55	42.35	17.10	17.10
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.37			47.22			22.63			26.69		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.16											
Intersection LOS	C											
Intersection V/C	0.432											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.113	2.759	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	689	333
d_b, Bicycle Delay [s]	31.25	31.25	19.34	31.25
I_b,int, Bicycle LOS Score for Intersection	2.020	1.779	2.272	2.081
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report

Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	174	5	325	18	15	12	0	282	35	541	790	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	174	5	325	18	15	12	0	282	35	541	790	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	1	81	5	4	3	0	71	9	135	198	3
Total Analysis Volume [veh/h]	174	5	325	18	15	12	0	282	35	541	790	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	19	0	9	19	0	20	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	3	3	0	15	15	33	48	48
g / C, Green / Cycle	0.25	0.25	0.04	0.04	0.00	0.17	0.17	0.36	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.11	0.23	0.01	0.02	0.00	0.07	0.07	0.34	0.16	0.16
s, saturation flow rate [veh/h]	1605	1431	1603	1561	1603	3204	1592	1603	3204	1672
c, Capacity [veh/h]	403	360	60	59	0	549	273	580	1709	892
d1, Uniform Delay [s]	28.39	32.64	42.15	42.41	0.00	33.07	33.15	27.65	11.73	11.73
k, delay calibration	0.11	0.22	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	0.77	15.13	2.73	5.53	0.00	2.01	4.24	7.42	0.47	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.90	0.30	0.46	0.00	0.38	0.39	0.93	0.31	0.31
d, Delay for Lane Group [s/veh]	29.15	47.77	44.88	47.95	0.00	35.08	37.39	35.07	12.19	12.62
Lane Group LOS	C	D	D	D	A	D	D	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.28	8.17	0.43	0.67	0.00	2.15	2.38	11.85	2.87	3.10
50th-Percentile Queue Length [ft]	81.89	204.24	10.78	16.80	0.00	53.82	59.52	296.33	71.81	77.60
95th-Percentile Queue Length [veh]	5.90	12.86	0.78	1.21	0.00	3.87	4.29	17.50	5.17	5.59
95th-Percentile Queue Length [ft]	147.40	321.43	19.40	30.24	0.00	96.87	107.13	437.49	129.26	139.67

Movement, Approach, & Intersection Results

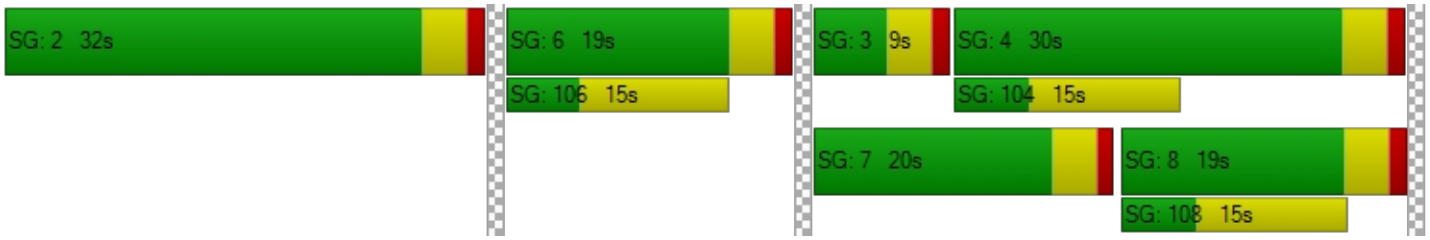
d_M, Delay for Movement [s/veh]	29.15	29.15	47.77	44.88	47.95	47.95	0.00	35.67	37.39	35.07	12.34	12.62
Movement LOS	C	C	D	D	D	D	A	D	D	D	B	B
d_A, Approach Delay [s/veh]	41.16			46.72			35.86			21.51		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	28.57											
Intersection LOS	C											
Intersection V/C	0.650											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.298	1.961	2.776	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	333	333	578
d_b, Bicycle Delay [s]	21.36	31.25	31.25	22.76
l_b,int, Bicycle LOS Score for Intersection	2.391	1.634	1.734	2.297
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.770

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	659	10	515	175	541	990
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]	659	10	515	175	541	990
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	165	3	129	44	135	248
Total Analysis Volume [veh/h]	659	10	515	175	541	990
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	23	0	42	65
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	25	25	32	61
g / C, Green / Cycle	0.23	0.23	0.28	0.28	0.36	0.68
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.20	0.22	0.34	0.31
s, saturation flow rate [veh/h]	1603	1597	1683	1545	1603	3204
c, Capacity [veh/h]	366	365	468	429	577	2188
d1, Uniform Delay [s]	33.87	33.87	29.51	30.21	27.80	6.56
k, delay calibration	0.18	0.18	0.50	0.50	0.31	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.77	13.87	9.97	14.70	17.49	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.92	0.74	0.80	0.94	0.45
d, Delay for Lane Group [s/veh]	47.63	47.74	39.48	44.91	45.29	7.24
Lane Group LOS	D	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	8.35	8.34	7.87	8.48	13.53	3.82
50th-Percentile Queue Length [ft]	208.77	208.38	196.66	211.98	338.20	95.48
95th-Percentile Queue Length [veh]	13.09	13.07	12.47	13.25	19.56	6.87
95th-Percentile Queue Length [ft]	327.24	326.74	311.65	331.37	489.00	171.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.69	47.74	41.27	44.91	45.29	7.24
Movement LOS	D	D	D	D	D	A
d_A, Approach Delay [s/veh]	47.69		42.19		20.68	
Approach LOS	D		D		C	
d_I, Intersection Delay [s/veh]	32.07					
Intersection LOS	C					
Intersection V/C	0.770					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.236	4.702	5.395
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	26.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	4	566	36	202	456	12	3	61	3	263	10	484
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	566	36	202	456	12	3	61	3	263	10	484
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	142	9	51	114	3	1	15	1	66	3	121
Total Analysis Volume [veh/h]	4	566	36	202	456	12	3	61	3	263	10	484
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	12	20	0	0	19	0	0	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	43	43	8	51	51	4	4	19	19	19
g / C, Green / Cycle	0.01	0.48	0.48	0.09	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.13	0.06	0.14	0.14	0.02	0.02	0.16	0.17	0.17
s, saturation flow rate [veh/h]	1603	3204	1632	3113	1683	1668	1676	1507	1603	1439	1431
c, Capacity [veh/h]	9	1544	786	266	944	936	77	69	335	301	299
d1, Uniform Delay [s]	44.59	13.80	13.82	40.26	10.07	10.07	41.82	41.83	33.68	34.00	34.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.81	0.40	0.80	4.46	0.63	0.64	4.12	4.67	4.06	5.60	5.68
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
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.26	0.26	0.76	0.25	0.25	0.45	0.46	0.78	0.82	0.82
d, Delay for Lane Group [s/veh]	72.40	14.20	14.62	44.72	10.70	10.71	45.95	46.50	37.74	39.60	39.69
Lane Group LOS	E	B	B	D	B	B	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.16	2.37	2.53	2.32	2.37	2.35	0.84	0.77	5.69	5.52	5.50
50th-Percentile Queue Length [ft]	4.02	59.20	63.18	58.07	59.17	58.74	21.02	19.34	142.33	137.97	137.56
95th-Percentile Queue Length [veh]	0.29	4.26	4.55	4.18	4.26	4.23	1.51	1.39	9.61	9.37	9.35
95th-Percentile Queue Length [ft]	7.23	106.56	113.73	104.53	106.51	105.73	37.83	34.81	240.16	234.29	233.73

Movement, Approach, & Intersection Results

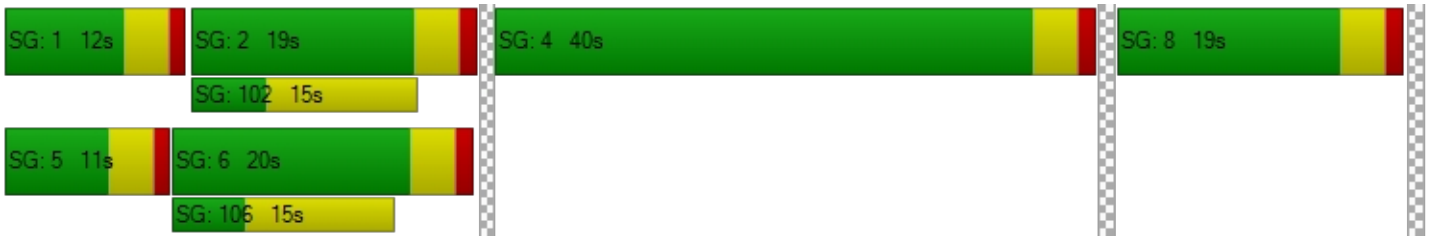
d_M, Delay for Movement [s/veh]	72.40	14.33	14.62	44.72	10.70	10.71	45.95	46.21	46.50	37.74	39.60	39.65
Movement LOS	E	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	14.73			20.96			46.21			38.98		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	26.46											
Intersection LOS	C											
Intersection V/C	0.384											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.972	2.507
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	356	333	800
d_b, Bicycle Delay [s]	31.25	30.42	31.25	16.20
l_b,int, Bicycle LOS Score for Intersection	1.893	2.112	1.615	2.809
Bicycle LOS	A	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	661	131	92	1247	0	696	0	116	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	661	131	92	1247	0	696	0	116	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	165	33	23	312	0	174	0	29	0	0	0
Total Analysis Volume [veh/h]	0	661	131	92	1247	0	696	0	116	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	27	0	11	38	0	52	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	48	6	58	24	24	
g / C, Green / Cycle	0.53	0.07	0.65	0.26	0.26	
(v / s)_i Volume / Saturation Flow Rate	0.21	0.06	0.27	0.22	0.08	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1703	114	2966	822	378	
d1, Uniform Delay [s]	12.45	41.20	7.71	31.38	26.51	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.67	12.53	0.44	2.51	0.45	
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	0.39	0.81	0.42	0.85	0.31	
d, Delay for Lane Group [s/veh]	13.12	53.73	8.15	33.89	26.97	
Lane Group LOS	B	D	A	C	C	
Critical Lane Group	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	3.82	2.38	3.50	7.25	2.01	
50th-Percentile Queue Length [ft]	95.60	59.55	87.50	181.25	50.22	
95th-Percentile Queue Length [veh]	6.88	4.29	6.30	11.67	3.62	
95th-Percentile Queue Length [ft]	172.09	107.18	157.50	291.65	90.40	

Movement, Approach, & Intersection Results

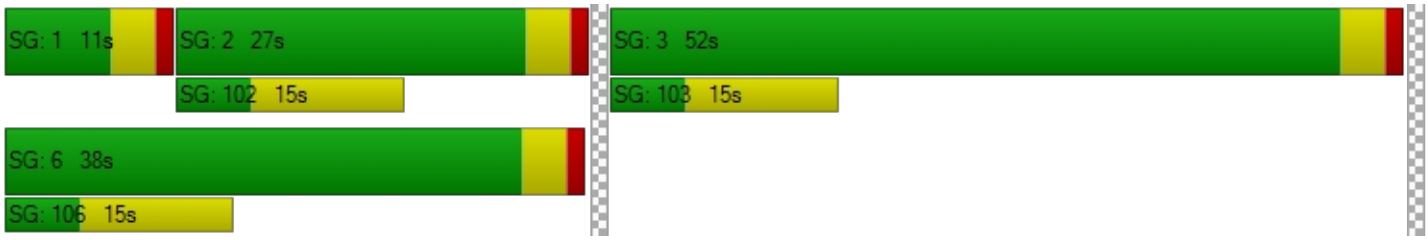
d_M, Delay for Movement [s/veh]	0.00	13.12	0.00	53.73	8.15	0.00	33.89	0.00	26.97	0.00	0.00	0.00
Movement LOS		B		D	A		C		C			
d_A, Approach Delay [s/veh]	13.12			11.28			32.90			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	17.95											
Intersection LOS	B											
Intersection V/C	0.496											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.750	0.000	2.206	1.761
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	511	756	0	0
d_b, Bicycle Delay [s]	24.94	17.42	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.105	2.296	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	89	1419	327	72	717	856	205	665	132	156	284	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1419	327	72	717	856	205	665	132	156	284	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	355	82	18	179	214	51	166	33	39	71	70
Total Analysis Volume [veh/h]	89	1419	327	72	717	856	205	665	132	156	284	281
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	17	36	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	31	31	5	30	30	30	21	21	21	21	17	17	17
g / C, Green / Cycle	0.07	0.34	0.34	0.06	0.33	0.33	0.33	0.23	0.23	0.23	0.23	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	0.23	0.04	0.16	0.30	0.30	0.13	0.19	0.16	0.16	0.10	0.17	0.11
s, saturation flow rate [veh/h]	1603	6113	1435	1603	4584	1431	1431	1603	1683	1532	1388	1603	1683	2532
c, Capacity [veh/h]	107	2094	492	92	1527	476	476	372	391	356	323	305	320	482
d1, Uniform Delay [s]	41.50	25.30	25.36	41.88	23.73	28.56	28.56	30.41	32.87	31.61	31.66	32.69	35.50	33.19
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.11	1.76	7.41	13.61	1.04	22.42	22.42	1.27	4.62	2.42	2.75	1.33	8.23	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	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	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	1.00

Lane Group Results

X, volume / capacity	0.83	0.67	0.68	0.79	0.47	0.90	0.90	0.55	0.83	0.69	0.70	0.51	0.89	0.58
d, Delay for Lane Group [s/veh]	56.61	27.05	32.77	55.49	24.77	50.98	50.98	31.68	37.48	34.03	34.41	34.02	43.73	34.32
Lane Group LOS	E	C	C	E	C	D	D	C	D	C	C	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	2.38	6.47	6.92	1.91	4.05	11.39	11.39	3.96	7.07	5.03	4.64	3.11	6.66	2.82
50th-Percentile Queue Length [ft]	59.38	161.71	172.89	47.68	101.3	284.7	284.7	99.11	176.7	125.7	115.8	77.83	166.58	70.48
95th-Percentile Queue Length [veh]	4.28	10.64	11.23	3.43	7.30	16.92	16.92	7.14	11.43	8.71	8.17	5.60	10.90	5.07
95th-Percentile Queue Length [ft]	106.89	265.99	280.70	85.82	182.4	423.0	423.0	178.4	285.7	217.6	204.1	140.09	272.42	126.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.61	27.08	32.77	55.49	24.77	50.98	31.68	35.77	34.41	34.02	43.73	34.32
Movement LOS	E	C	C	E	C	D	C	D	C	C	D	C
d_A, Approach Delay [s/veh]	29.53			39.75			34.75			37.96		
Approach LOS	C			D			C			D		
d_I, Intersection Delay [s/veh]	34.94											
Intersection LOS	C											
Intersection V/C	0.717											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.245	0.000	0.000	2.867
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	711	400	400
d_b, Bicycle Delay [s]	23.47	18.69	28.80	28.80
l_b,int, Bicycle LOS Score for Intersection	2.165	2.238	2.111	2.749
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	1	0	0	35	137	130	0	31	0	0	0
Total Analysis Volume [veh/h]	268	2	0	0	141	547	519	0	125	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	1.06	0.50	0.32	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	161.80	11.64	8.26	0.00	0.00	7.46	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	36.52	36.52	0.00	0.00	7.83	2.92	1.40	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	913.06	913.06	0.00	0.00	195.67	73.08	34.90	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			42.42			6.65			2.49		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	1706.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	41.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.709

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	259	11	28	22	240	320	167	827	124	317	685	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	11	28	22	240	320	167	827	124	317	685	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	7	6	60	80	42	207	31	79	171	2
Total Analysis Volume [veh/h]	259	11	28	22	240	320	167	827	124	317	685	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	29	0	10	32	0	10	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	23	23	11	29	29	12	30	30
g / C, Green / Cycle	0.12	0.12	0.25	0.25	0.12	0.32	0.32	0.13	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.16	0.22	0.10	0.29	0.29	0.10	0.21	0.21
s, saturation flow rate [veh/h]	1603	1573	1676	1431	1603	1683	1607	3113	1683	1677
c, Capacity [veh/h]	188	185	419	358	195	546	521	406	560	558
d1, Uniform Delay [s]	38.68	38.70	29.99	32.60	38.74	28.89	28.90	37.88	25.21	25.21
k, delay calibration	0.11	0.11	0.11	0.21	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.57	7.80	1.53	13.81	10.20	19.31	20.12	3.30	5.06	5.08
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
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.80	0.63	0.89	0.86	0.89	0.89	0.78	0.62	0.62
d, Delay for Lane Group [s/veh]	46.26	46.49	31.53	46.41	48.95	48.21	49.03	41.18	30.27	30.29
Lane Group LOS	D	D	C	D	D	D	D	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.58	3.53	5.03	7.82	3.98	12.04	11.63	3.39	6.52	6.50
50th-Percentile Queue Length [ft]	89.38	88.22	125.85	195.45	99.47	301.06	290.76	84.81	162.93	162.42
95th-Percentile Queue Length [veh]	6.44	6.35	8.71	12.40	7.16	17.73	17.22	6.11	10.70	10.68
95th-Percentile Queue Length [ft]	160.89	158.79	217.85	310.08	179.04	443.34	430.59	152.66	267.59	266.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.36	46.49	46.49	31.53	31.53	46.41	48.95	48.55	49.03	41.18	30.28	30.29
Movement LOS	D	D	D	C	C	D	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	46.37			39.71			48.66			33.71		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	41.68											
Intersection LOS	D											
Intersection V/C	0.709											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.233	2.998	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	556	622	622
d_b, Bicycle Delay [s]	31.25	23.47	21.36	21.36
l_b,int, Bicycle LOS Score for Intersection	2.051	2.520	2.482	2.392
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report

Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	99.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.827

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	106	13	230	34	79	18	36	908	55	653	538	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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]	106	13	230	34	79	18	36	908	55	653	538	56
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	3	58	9	20	5	9	227	14	163	135	14
Total Analysis Volume [veh/h]	106	13	230	34	79	18	36	908	55	653	538	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	23	0	29	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	7	7	3	13	13	39	49	49
g / C, Green / Cycle	0.17	0.17	0.08	0.08	0.03	0.14	0.14	0.43	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.02	0.06	0.02	0.20	0.20	0.41	0.12	0.12
s, saturation flow rate [veh/h]	1611	1431	1603	1630	1603	3204	1634	1603	3204	1603
c, Capacity [veh/h]	269	238	127	129	55	464	237	692	1738	869
d1, Uniform Delay [s]	33.74	37.24	38.98	40.57	42.95	38.48	38.48	24.54	10.76	10.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.16	0.50	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
d2, Incremental Delay [s]	1.15	19.82	1.12	8.48	12.68	180.95	193.80	9.96	0.31	0.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.96	0.27	0.75	0.66	1.37	1.38	0.94	0.23	0.23
d, Delay for Lane Group [s/veh]	34.89	57.06	40.10	49.05	55.63	219.43	232.28	34.50	11.06	11.37
Lane Group LOS	C	E	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.39	6.23	0.74	2.38	0.98	16.69	17.87	14.37	2.00	2.08
50th-Percentile Queue Length [ft]	59.80	155.80	18.47	59.53	24.40	417.21	446.69	359.36	50.06	51.98
95th-Percentile Queue Length [veh]	4.31	10.33	1.33	4.29	1.76	26.51	28.17	20.59	3.60	3.74
95th-Percentile Queue Length [ft]	107.63	258.16	33.25	107.15	43.93	662.86	704.28	514.80	90.10	93.57

Movement, Approach, & Intersection Results

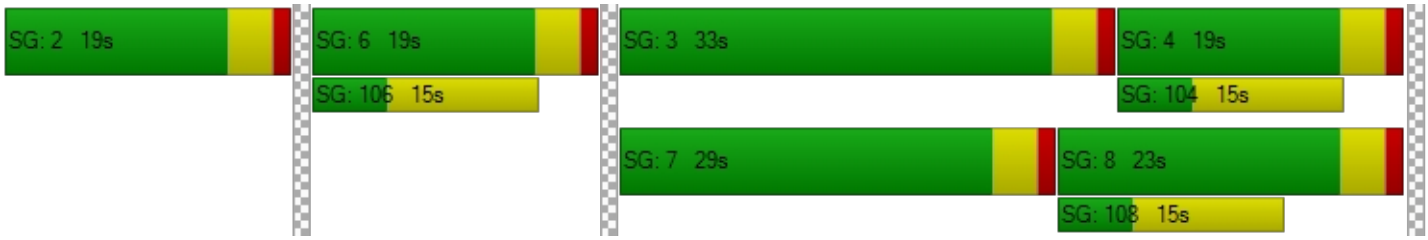
d_M, Delay for Movement [s/veh]	34.89	34.89	57.06	40.10	49.05	49.05	55.63	223.26	232.28	34.50	11.14	11.37
Movement LOS	C	C	E	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	49.50			46.73			217.72			23.39		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	99.07											
Intersection LOS	F											
Intersection V/C	0.827											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.311	2.018	2.827	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	422	333
d_b, Bicycle Delay [s]	31.25	31.25	28.01	31.25
l_b,int, Bicycle LOS Score for Intersection	2.135	1.776	2.109	2.245
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	46.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.853

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	491	30	937	273	483	574
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]	491	30	937	273	483	574
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	123	8	234	68	121	144
Total Analysis Volume [veh/h]	491	30	937	273	483	574
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	39	0	32	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	35	35	28	67
g / C, Green / Cycle	0.17	0.17	0.39	0.39	0.31	0.74
(v / s)_i Volume / Saturation Flow Rate	0.16	0.16	0.36	0.39	0.30	0.18
s, saturation flow rate [veh/h]	1603	1581	1683	1559	1603	3204
c, Capacity [veh/h]	267	263	654	606	499	2385
d1, Uniform Delay [s]	37.36	37.37	26.24	27.46	30.57	3.58
k, delay calibration	0.11	0.11	0.50	0.50	0.38	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.61	21.80	20.85	36.07	28.25	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.98	0.98	0.92	1.00	0.97	0.24
d, Delay for Lane Group [s/veh]	58.97	59.16	47.08	63.53	58.81	3.82
Lane Group LOS	E	E	D	E	E	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	7.23	7.15	15.50	18.33	13.83	1.30
50th-Percentile Queue Length [ft]	180.82	178.68	387.41	458.19	345.63	32.61
95th-Percentile Queue Length [veh]	11.64	11.53	21.95	25.35	19.92	2.35
95th-Percentile Queue Length [ft]	291.08	288.29	548.81	633.71	498.07	58.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.06	59.16	52.91	63.53	58.81	3.82
Movement LOS	E	E	D	E	E	A
d_A, Approach Delay [s/veh]	59.07		55.31		28.95	
Approach LOS	E		E		C	
d_I, Intersection Delay [s/veh]	46.02					
Intersection LOS	D					
Intersection V/C	0.853					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	4.992	5.131	5.004
Bicycle LOS	E	F	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.343

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	3	718	37	300	795	19	18	31	18	105	14	182
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]	3	718	37	300	795	19	18	31	18	105	14	182
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	180	9	75	199	5	5	8	5	26	4	46
Total Analysis Volume [veh/h]	3	718	37	300	795	19	18	31	18	105	14	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	14	19	0	33	38	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	50	50	11	61	61	4	4	8	8	8
g / C, Green / Cycle	0.00	0.56	0.56	0.12	0.68	0.68	0.05	0.05	0.09	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.00	0.16	0.16	0.10	0.24	0.24	0.02	0.02	0.07	0.07	0.07
s, saturation flow rate [veh/h]	1603	3204	1641	3113	1683	1669	1641	1392	1603	1462	1431
c, Capacity [veh/h]	8	1787	915	389	1141	1131	76	64	150	137	134
d1, Uniform Delay [s]	44.65	10.43	10.44	38.13	6.17	6.17	41.85	41.90	39.57	39.66	39.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.49	0.39	0.76	3.26	0.88	0.89	4.40	5.79	5.82	7.06	7.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.28	0.28	0.77	0.36	0.36	0.47	0.49	0.70	0.72	0.73
d, Delay for Lane Group [s/veh]	73.14	10.82	11.20	41.39	7.05	7.06	46.25	47.69	45.39	46.72	46.94
Lane Group LOS	E	B	B	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.13	2.50	2.67	3.33	3.05	3.03	0.85	0.78	2.47	2.37	2.33
50th-Percentile Queue Length [ft]	3.19	62.52	66.85	83.26	76.37	75.82	21.20	19.62	61.63	59.17	58.26
95th-Percentile Queue Length [veh]	0.23	4.50	4.81	5.99	5.50	5.46	1.53	1.41	4.44	4.26	4.19
95th-Percentile Queue Length [ft]	5.74	112.54	120.33	149.87	137.47	136.47	38.16	35.32	110.93	106.50	104.87

Movement, Approach, & Intersection Results

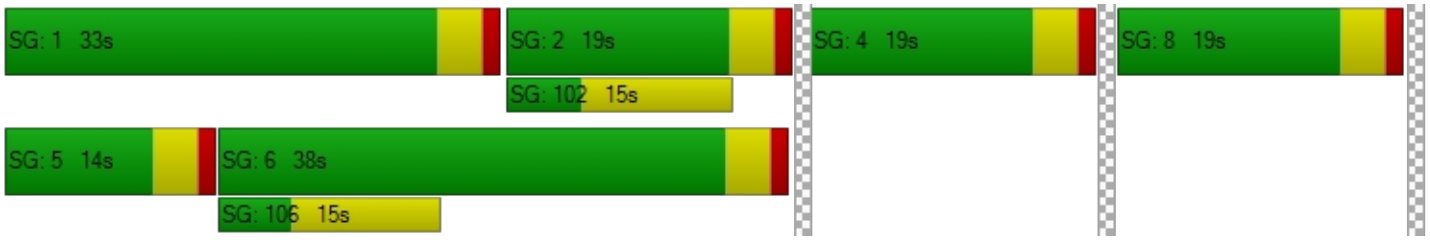
d_M, Delay for Movement [s/veh]	73.14	10.94	11.20	41.39	7.05	7.06	46.25	46.89	47.69	45.39	46.72	46.83
Movement LOS	E	B	B	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	11.20			16.30			46.93			46.32		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.52											
Intersection LOS	B											
Intersection V/C	0.343											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.975	2.432
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	756	333	333
d_b, Bicycle Delay [s]	31.25	17.42	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	1.977	2.479	1.615	2.056
Bicycle LOS	A	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.632

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1307	333	234	1046	0	244	0	29	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1307	333	234	1046	0	244	0	29	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	327	83	59	262	0	61	0	7	0	0	0
Total Analysis Volume [veh/h]	0	1307	333	234	1046	0	244	0	29	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	29	0	42	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	53	15	73	9	9	
g / C, Green / Cycle	0.59	0.17	0.81	0.10	0.10	
(v / s)_i Volume / Saturation Flow Rate	0.41	0.15	0.23	0.08	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1899	274	3703	322	148	
d1, Uniform Delay [s]	12.62	36.24	2.16	39.25	36.92	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.06	7.52	0.19	3.65	0.64	
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	0.69	0.86	0.28	0.76	0.20	
d, Delay for Lane Group [s/veh]	14.69	43.76	2.35	42.90	37.56	
Lane Group LOS	B	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	8.58	5.47	0.93	2.75	0.60	
50th-Percentile Queue Length [ft]	214.39	136.68	23.28	68.74	15.11	
95th-Percentile Queue Length [veh]	13.38	9.30	1.68	4.95	1.09	
95th-Percentile Queue Length [ft]	334.45	232.55	41.91	123.73	27.21	

Movement, Approach, & Intersection Results

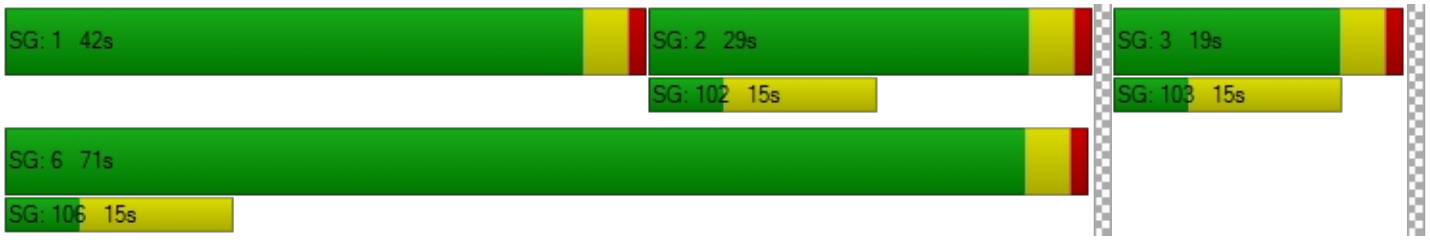
d_M, Delay for Movement [s/veh]	0.00	14.69	0.00	43.76	2.35	0.00	42.90	0.00	37.56	0.00	0.00	0.00
Movement LOS		B		D	A		D		D			
d_A, Approach Delay [s/veh]	14.69			9.92			42.33			0.00		
Approach LOS	B			A			D			A		
d_I, Intersection Delay [s/veh]	15.19											
Intersection LOS	B											
Intersection V/C	0.632											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.768	0.000	2.030	1.830
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1489	0	0
d_b, Bicycle Delay [s]	23.47	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.638	2.264	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	77.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.814

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	48	1362	236	61	1336	332	531	587	458	312	202	537
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	1362	236	61	1336	332	531	587	458	312	202	537
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	341	59	15	334	83	133	147	115	78	51	134
Total Analysis Volume [veh/h]	48	1362	236	61	1336	332	531	587	458	312	202	537
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	29	0	9	29	0	0	31	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	17	4	18	18	18	36	36	36	36	17	17	17
g / C, Green / Cycle	0.04	0.19	0.19	0.05	0.20	0.20	0.20	0.40	0.40	0.40	0.40	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.21	0.04	0.22	0.22	0.22	0.23	0.23	0.23	0.35	0.19	0.12	0.21
s, saturation flow rate [veh/h]	1603	6113	1487	1603	4584	1666	1431	1603	1650	1532	1302	1603	1683	2532
c, Capacity [veh/h]	63	1165	283	76	909	330	284	634	653	606	515	303	318	478
d1, Uniform Delay [s]	42.81	36.43	36.43	42.48	36.08	36.08	36.08	21.45	21.45	21.44	25.35	36.50	33.64	36.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.21	0.15	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.97	58.53	87.84	17.92	59.11	77.36	81.80	0.88	0.86	0.92	9.94	35.99	2.11	61.89
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.76	1.10	1.11	0.81	1.09	1.09	1.10	0.59	0.59	0.59	0.89	1.03	0.64	1.12
d, Delay for Lane Group [s/veh]	59.78	94.96	124.26	60.39	95.18	113.4	117.8	22.33	22.30	22.37	35.29	72.49	35.75	98.39
Lane Group LOS	E	F	F	E	F	F	F	C	C	C	D	F	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.34	10.98	12.99	1.70	11.46	14.17	12.52	6.13	6.30	5.86	10.05	9.52	4.18	9.24
50th-Percentile Queue Length [ft]	33.58	274.43	324.67	42.59	286.5	354.2	312.9	153.2	157.5	146.4	251.3	237.98	104.47	230.98
95th-Percentile Queue Length [veh]	2.42	17.20	19.94	3.07	17.80	21.31	19.19	10.19	10.42	9.83	15.25	14.80	7.52	15.01
95th-Percentile Queue Length [ft]	60.45	429.88	498.40	76.67	444.9	532.8	479.8	254.6	260.4	245.7	381.3	369.97	188.04	375.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.78	96.67	124.26	60.39	99.84	117.88	22.32	22.34	35.29	72.49	35.75	98.39
Movement LOS	E	F	F	E	F	F	C	C	D	F	D	F
d_A, Approach Delay [s/veh]	99.55			101.86			26.10			78.66		
Approach LOS	F			F			C			E		
d_I, Intersection Delay [s/veh]	77.27											
Intersection LOS	E											
Intersection V/C	0.814											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.334	0.000	0.000	2.873
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	556	600	378
d_b, Bicycle Delay [s]	23.47	23.47	22.05	29.61
l_b,int, Bicycle LOS Score for Intersection	2.103	2.273	2.426	3.294
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	2	0	0	11	19	248	0	109	0	0	0
Total Analysis Volume [veh/h]	248	9	0	0	44	77	991	0	434	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.38	0.00	0.00	3.47	0.07	0.61	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	1709.97	8.57	10.63	0.00	0.00	8.20	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	34.89	34.89	0.00	0.00	6.47	0.23	4.45	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	872.19	872.19	0.00	0.00	161.64	5.72	111.31	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			627.26			7.39			2.73		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1473.34											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	29.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.476

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	252	16	23	7	68	72	320	651	67	282	443	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	16	23	7	68	72	320	651	67	282	443	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	4	6	2	17	18	80	163	17	71	111	2
Total Analysis Volume [veh/h]	252	16	23	7	68	72	320	651	67	282	443	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	35	0	17	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	7	7	20	46	46	11	37	37
g / C, Green / Cycle	0.12	0.12	0.07	0.07	0.22	0.52	0.52	0.12	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.04	0.05	0.20	0.22	0.22	0.09	0.13	0.13
s, saturation flow rate [veh/h]	1603	1581	1675	1431	1603	1683	1628	3113	1683	1671
c, Capacity [veh/h]	185	182	123	105	359	866	838	370	690	685
d1, Uniform Delay [s]	38.76	38.77	40.46	40.70	33.86	13.53	13.53	38.41	18.12	18.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.43	7.60	4.85	7.73	7.69	1.50	1.55	3.26	1.27	1.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.79	0.61	0.69	0.89	0.42	0.42	0.76	0.33	0.33
d, Delay for Lane Group [s/veh]	46.19	46.37	45.32	48.43	41.55	15.03	15.08	41.67	19.39	19.40
Lane Group LOS	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.48	3.45	1.74	1.75	7.10	4.34	4.21	3.03	3.17	3.15
50th-Percentile Queue Length [ft]	87.00	86.20	43.53	43.67	177.49	108.54	105.33	75.76	79.26	78.78
95th-Percentile Queue Length [veh]	6.26	6.21	3.13	3.14	11.47	7.76	7.58	5.45	5.71	5.67
95th-Percentile Queue Length [ft]	156.60	155.16	78.36	78.61	286.74	193.97	189.49	136.37	142.66	141.81

Movement, Approach, & Intersection Results

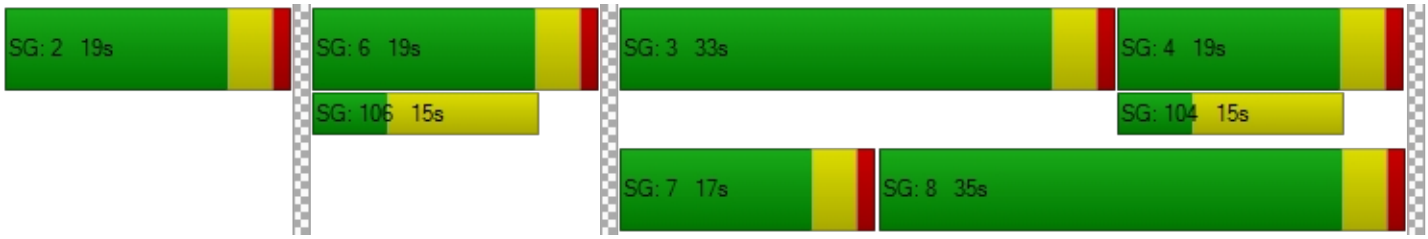
d_M, Delay for Movement [s/veh]	46.27	46.37	46.37	45.32	45.32	48.43	41.55	15.05	15.08	41.67	19.40	19.40
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.28			46.84			23.22			27.95		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.40											
Intersection LOS	C											
Intersection V/C	0.476											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.128	2.829	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	689	333
d_b, Bicycle Delay [s]	31.25	31.25	19.34	31.25
l_b,int, Bicycle LOS Score for Intersection	2.040	1.802	2.416	2.165
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.673

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	209	5	325	18	15	12	0	388	37	543	884	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	5	325	18	15	12	0	388	37	543	884	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	1	81	5	4	3	0	97	9	136	221	3
Total Analysis Volume [veh/h]	209	5	325	18	15	12	0	388	37	543	884	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	19	0	9	19	0	20	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	23	3	3	0	15	15	33	48	48
g / C, Green / Cycle	0.25	0.25	0.04	0.04	0.00	0.17	0.17	0.36	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.13	0.23	0.01	0.02	0.00	0.09	0.09	0.34	0.18	0.18
s, saturation flow rate [veh/h]	1605	1431	1603	1561	1603	3204	1610	1603	3204	1673
c, Capacity [veh/h]	404	360	60	59	0	543	273	582	1707	891
d1, Uniform Delay [s]	29.06	32.59	42.15	42.41	0.00	34.02	34.09	27.59	12.03	12.03
k, delay calibration	0.11	0.22	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	1.08	14.90	2.73	5.53	0.00	3.49	7.15	7.43	0.55	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
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.90	0.30	0.46	0.00	0.52	0.53	0.93	0.34	0.34
d, Delay for Lane Group [s/veh]	30.14	47.49	44.88	47.95	0.00	37.51	41.24	35.02	12.58	13.09
Lane Group LOS	C	D	D	D	A	D	D	D	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.03	8.14	0.43	0.67	0.00	3.02	3.38	11.89	3.29	3.56
50th-Percentile Queue Length [ft]	100.67	203.59	10.78	16.80	0.00	75.41	84.41	297.32	82.34	89.12
95th-Percentile Queue Length [veh]	7.25	12.82	0.78	1.21	0.00	5.43	6.08	17.55	5.93	6.42
95th-Percentile Queue Length [ft]	181.21	320.59	19.40	30.24	0.00	135.75	151.94	438.71	148.22	160.41

Movement, Approach, & Intersection Results

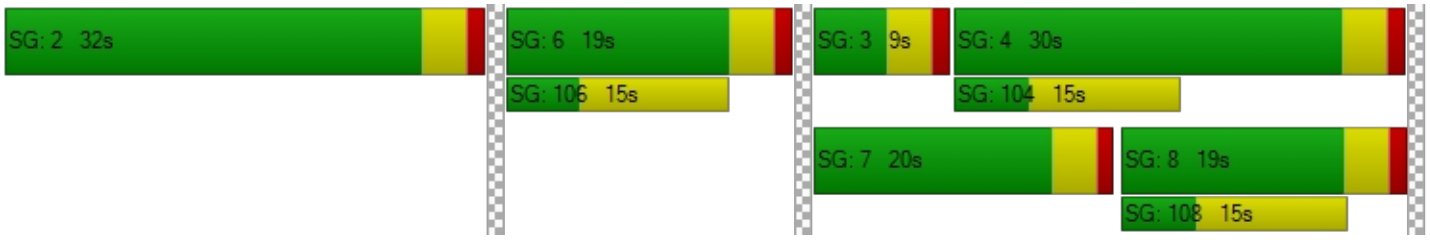
d_M, Delay for Movement [s/veh]	30.14	30.14	47.49	44.88	47.95	47.95	0.00	38.54	41.24	35.02	12.75	13.09
Movement LOS	C	C	D	D	D	D	A	D	D	D	B	B
d_A, Approach Delay [s/veh]	40.60			46.72			38.78			21.17		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	28.98											
Intersection LOS	C											
Intersection V/C	0.673											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.310	1.961	2.809	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	622	333	333	578
d_b, Bicycle Delay [s]	21.36	31.25	31.25	22.76
l_b,int, Bicycle LOS Score for Intersection	2.449	1.634	1.793	2.350
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	689	10	526	175	541	1011
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]	689	10	526	175	541	1011
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	3	132	44	135	253
Total Analysis Volume [veh/h]	689	10	526	175	541	1011
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	23	0	42	65
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	25	25	32	61
g / C, Green / Cycle	0.23	0.23	0.27	0.27	0.36	0.68
(v / s)_i Volume / Saturation Flow Rate	0.22	0.22	0.21	0.23	0.34	0.32
s, saturation flow rate [veh/h]	1603	1597	1683	1547	1603	3204
c, Capacity [veh/h]	374	373	460	423	577	2172
d1, Uniform Delay [s]	33.84	33.84	30.02	30.73	27.82	6.83
k, delay calibration	0.20	0.20	0.50	0.50	0.31	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.33	17.47	11.34	16.95	17.81	0.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.94	0.76	0.83	0.94	0.47
d, Delay for Lane Group [s/veh]	51.16	51.31	41.36	47.68	45.63	7.55
Lane Group LOS	D	D	D	D	D	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	9.09	9.08	8.21	8.91	13.58	4.04
50th-Percentile Queue Length [ft]	227.27	227.00	205.14	222.68	339.56	100.90
95th-Percentile Queue Length [veh]	14.04	14.02	12.90	13.80	19.63	7.27
95th-Percentile Queue Length [ft]	350.88	350.55	322.59	345.05	490.66	181.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.24	51.31	43.47	47.68	45.63	7.55
Movement LOS	D	D	D	D	D	A
d_A, Approach Delay [s/veh]	51.24		44.52		20.82	
Approach LOS	D		D		C	
d_I, Intersection Delay [s/veh]	33.65					
Intersection LOS	C					
Intersection V/C	0.783					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.286	4.711	5.413
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	26.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	4	591	36	208	467	12	3	61	3	263	10	539
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	591	36	208	467	12	3	61	3	263	10	539
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	148	9	52	117	3	1	15	1	66	3	135
Total Analysis Volume [veh/h]	4	591	36	208	467	12	3	61	3	263	10	539
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	12	20	0	0	19	0	0	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	41	41	8	49	49	4	4	21	21	21
g / C, Green / Cycle	0.01	0.46	0.46	0.09	0.54	0.54	0.05	0.05	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.00	0.13	0.13	0.07	0.14	0.14	0.02	0.02	0.16	0.19	0.19
s, saturation flow rate [veh/h]	1603	3204	1634	3113	1683	1668	1676	1507	1603	1438	1431
c, Capacity [veh/h]	9	1475	752	271	911	903	77	69	367	329	327
d1, Uniform Delay [s]	44.59	15.06	15.08	40.18	11.03	11.03	41.82	41.83	32.03	33.10	33.12
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.81	0.48	0.94	4.51	0.71	0.71	4.12	4.67	2.64	5.60	5.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.28	0.28	0.77	0.26	0.26	0.45	0.46	0.72	0.84	0.84
d, Delay for Lane Group [s/veh]	72.40	15.53	16.02	44.69	11.74	11.75	45.95	46.50	34.67	38.69	38.81
Lane Group LOS	E	B	B	D	B	B	D	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.16	2.62	2.79	2.39	2.58	2.56	0.84	0.77	5.43	6.09	6.08
50th-Percentile Queue Length [ft]	4.02	65.38	69.83	59.79	64.47	64.00	21.02	19.34	135.73	152.16	151.94
95th-Percentile Queue Length [veh]	0.29	4.71	5.03	4.31	4.64	4.61	1.51	1.39	9.25	10.13	10.12
95th-Percentile Queue Length [ft]	7.23	117.69	125.69	107.63	116.04	115.19	37.83	34.81	231.26	253.31	253.01

Movement, Approach, & Intersection Results

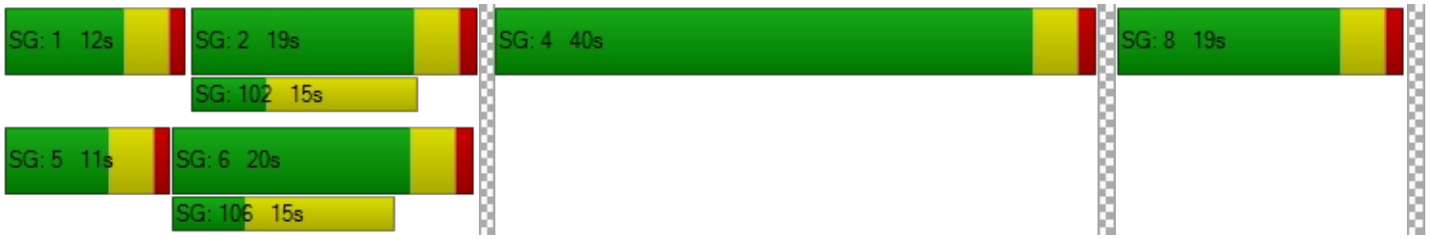
d_M, Delay for Movement [s/veh]	72.40	15.68	16.02	44.69	11.74	11.75	45.95	46.21	46.50	34.67	38.69	38.75
Movement LOS	E	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	16.06			21.72			46.21			37.43		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	26.64											
Intersection LOS	C											
Intersection V/C	0.410											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.972	2.519
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	356	333	800
d_b, Bicycle Delay [s]	31.25	30.42	31.25	16.20
l_b,int, Bicycle LOS Score for Intersection	1.907	2.126	1.615	2.899
Bicycle LOS	A	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	697	131	116	1266	0	743	0	116	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	697	131	116	1266	0	743	0	116	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	174	33	29	317	0	186	0	29	0	0	0
Total Analysis Volume [veh/h]	0	697	131	116	1266	0	743	0	116	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	27	0	11	38	0	52	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	46	7	57	25	25	
g / C, Green / Cycle	0.51	0.08	0.63	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.22	0.07	0.28	0.24	0.08	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1632	125	2895	871	400	
d1, Uniform Delay [s]	13.85	41.26	8.44	30.67	25.41	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.82	23.74	0.48	2.51	0.40	
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	0.43	0.93	0.44	0.85	0.29	
d, Delay for Lane Group [s/veh]	14.67	65.00	8.93	33.18	25.81	
Lane Group LOS	B	E	A	C	C	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	4.36	3.34	3.81	7.69	1.96	
50th-Percentile Queue Length [ft]	108.92	83.61	95.19	192.33	48.90	
95th-Percentile Queue Length [veh]	7.78	6.02	6.85	12.24	3.52	
95th-Percentile Queue Length [ft]	194.50	150.51	171.35	306.05	88.01	

Movement, Approach, & Intersection Results

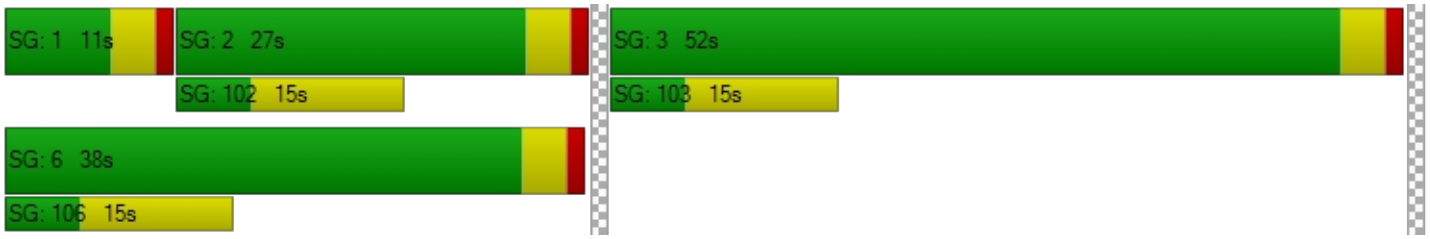
d_M, Delay for Movement [s/veh]	0.00	14.67	0.00	65.00	8.93	0.00	33.18	0.00	25.81	0.00	0.00	0.00
Movement LOS		B		E	A		C		C			
d_A, Approach Delay [s/veh]	14.67			13.63			32.18			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	19.30											
Intersection LOS	B											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.753	0.000	2.221	1.773
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	511	756	0	0
d_b, Bicycle Delay [s]	24.94	17.42	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.135	2.320	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	35.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	89	1442	327	72	729	857	207	667	132	156	285	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	89	1442	327	72	729	857	207	667	132	156	285	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	361	82	18	182	214	52	167	33	39	71	70
Total Analysis Volume [veh/h]	89	1442	327	72	729	857	207	667	132	156	285	281
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	17	36	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	31	31	5	30	30	30	21	21	21	21	17	17	17
g / C, Green / Cycle	0.07	0.34	0.34	0.06	0.33	0.33	0.33	0.23	0.23	0.23	0.23	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	0.24	0.04	0.16	0.30	0.30	0.13	0.19	0.16	0.16	0.10	0.17	0.11
s, saturation flow rate [veh/h]	1603	6113	1438	1603	4584	1431	1431	1603	1683	1532	1389	1603	1683	2532
c, Capacity [veh/h]	107	2090	492	92	1524	476	476	373	391	356	323	306	321	483
d1, Uniform Delay [s]	41.50	25.44	25.50	41.88	23.85	28.63	28.63	30.44	32.86	31.62	31.67	32.66	35.49	33.16
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.11	1.84	7.71	13.61	1.08	22.80	22.80	1.30	4.61	2.45	2.77	1.32	8.27	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	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	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	1.00

Lane Group Results

X, volume / capacity	0.83	0.68	0.69	0.79	0.48	0.90	0.90	0.56	0.83	0.70	0.70	0.51	0.89	0.58
d, Delay for Lane Group [s/veh]	56.61	27.28	33.22	55.49	24.92	51.43	51.43	31.74	37.46	34.06	34.44	33.97	43.76	34.27
Lane Group LOS	E	C	C	E	C	D	D	C	D	C	C	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	2.38	6.59	7.07	1.91	4.14	11.46	11.46	4.01	7.07	5.05	4.66	3.11	6.69	2.82
50th-Percentile Queue Length [ft]	59.38	164.80	176.75	47.68	103.5	286.4	286.4	100.2	176.7	126.3	116.4	77.76	167.25	70.42
95th-Percentile Queue Length [veh]	4.28	10.80	11.43	3.43	7.45	17.01	17.01	7.22	11.43	8.74	8.20	5.60	10.93	5.07
95th-Percentile Queue Length [ft]	106.89	270.07	285.77	85.82	186.3	425.2	425.2	180.4	285.7	218.5	204.9	139.97	273.30	126.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.61	27.33	33.22	55.49	24.92	51.43	31.74	35.77	34.44	33.97	43.76	34.27
Movement LOS	E	C	C	E	C	D	C	D	C	C	D	C
d_A, Approach Delay [s/veh]	29.77			39.95			34.77			37.95		
Approach LOS	C			D			C			D		
d_I, Intersection Delay [s/veh]	35.08											
Intersection LOS	D											
Intersection V/C	0.718											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.248	0.000	0.000	2.867
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	711	400	400
d_b, Bicycle Delay [s]	23.47	18.69	28.80	28.80
l_b,int, Bicycle LOS Score for Intersection	2.173	2.244	2.113	2.751
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	1	0	0	35	137	133	0	31	0	0	0
Total Analysis Volume [veh/h]	268	2	0	0	141	547	530	0	125	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	1.11	0.50	0.33	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	178.97	11.64	8.29	0.00	0.00	7.46	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	36.52	36.52	0.00	0.00	8.18	2.92	1.44	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	913.06	913.06	0.00	0.00	204.60	73.08	35.99	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			45.93			6.71			2.49		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	1696.22											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	141.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	259	11	50	22	280	360	243	1139	124	467	915	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	11	50	22	280	360	243	1139	124	467	915	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	13	6	70	90	61	285	31	117	229	2
Total Analysis Volume [veh/h]	259	11	50	22	280	360	243	1139	124	467	915	7
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	29	0	10	32	0	10	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	25	25	10	22	22	16	28	28
g / C, Green / Cycle	0.12	0.12	0.28	0.28	0.11	0.24	0.24	0.18	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.18	0.25	0.15	0.38	0.38	0.15	0.27	0.27
s, saturation flow rate [veh/h]	1603	1549	1677	1431	1603	1683	1626	3113	1683	1678
c, Capacity [veh/h]	200	193	463	395	175	406	392	561	525	524
d1, Uniform Delay [s]	38.35	38.37	28.77	31.52	40.08	34.15	34.15	35.57	29.35	29.35
k, delay calibration	0.11	0.11	0.11	0.27	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.68	8.06	1.64	17.69	181.19	270.44	277.93	3.29	18.56	18.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.81	0.65	0.91	1.39	1.58	1.59	0.83	0.88	0.88
d, Delay for Lane Group [s/veh]	46.03	46.43	30.41	49.22	221.26	304.59	312.08	38.86	47.91	48.00
Lane Group LOS	D	D	C	D	F	F	F	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.86	3.76	5.73	9.15	12.51	38.73	38.24	4.90	11.38	11.37
50th-Percentile Queue Length [ft]	96.51	94.12	143.29	228.78	312.65	968.32	955.89	122.52	284.60	284.30
95th-Percentile Queue Length [veh]	6.95	6.78	9.66	14.11	20.50	60.11	59.57	8.53	16.92	16.90
95th-Percentile Queue Length [ft]	173.71	169.42	241.45	352.81	512.43	1502.77	1489.18	213.28	422.94	422.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.18	46.43	46.43	30.41	30.41	49.22	221.26	307.87	312.08	38.86	47.95	48.00
Movement LOS	D	D	D	C	C	D	F	F	F	D	D	D
d_A, Approach Delay [s/veh]	46.22			40.64			294.25			44.90		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	141.14											
Intersection LOS	F											
Intersection V/C	0.887											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.292	3.191	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	556	622	622
d_b, Bicycle Delay [s]	31.25	23.47	21.36	21.36
l_b,int, Bicycle LOS Score for Intersection	2.088	2.652	2.802	2.706
Bicycle LOS	B	B	C	B

Sequence

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

Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	173.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.888

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	207	13	230	34	79	18	36	1181	68	656	749	56
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	13	230	34	79	18	36	1181	68	656	749	56
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	3	58	9	20	5	9	295	17	164	187	14
Total Analysis Volume [veh/h]	207	13	230	34	79	18	36	1181	68	656	749	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	23	0	29	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	7	7	3	13	13	39	49	49
g / C, Green / Cycle	0.17	0.17	0.08	0.08	0.03	0.14	0.14	0.43	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.14	0.16	0.02	0.06	0.02	0.26	0.26	0.41	0.17	0.17
s, saturation flow rate [veh/h]	1607	1431	1603	1630	1603	3204	1636	1603	3204	1624
c, Capacity [veh/h]	268	238	127	129	55	459	234	694	1738	881
d1, Uniform Delay [s]	36.21	37.24	38.98	40.57	42.95	38.56	38.56	24.47	11.31	11.31
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.16	0.50	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
d2, Incremental Delay [s]	6.19	19.82	1.12	8.48	12.68	369.35	377.56	10.11	0.46	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.96	0.27	0.75	0.66	1.80	1.80	0.94	0.31	0.31
d, Delay for Lane Group [s/veh]	42.40	57.06	40.10	49.05	55.63	407.91	416.12	34.58	11.77	12.22
Lane Group LOS	D	E	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	5.04	6.23	0.74	2.38	0.98	28.51	29.65	14.46	2.85	3.00
50th-Percentile Queue Length [ft]	125.89	155.80	18.47	59.53	24.40	712.67	741.28	361.40	71.23	74.91
95th-Percentile Queue Length [veh]	8.72	10.33	1.33	4.29	1.76	45.35	46.99	20.69	5.13	5.39
95th-Percentile Queue Length [ft]	217.90	258.16	33.25	107.15	43.93	1133.69	1174.84	517.29	128.22	134.85

Movement, Approach, & Intersection Results

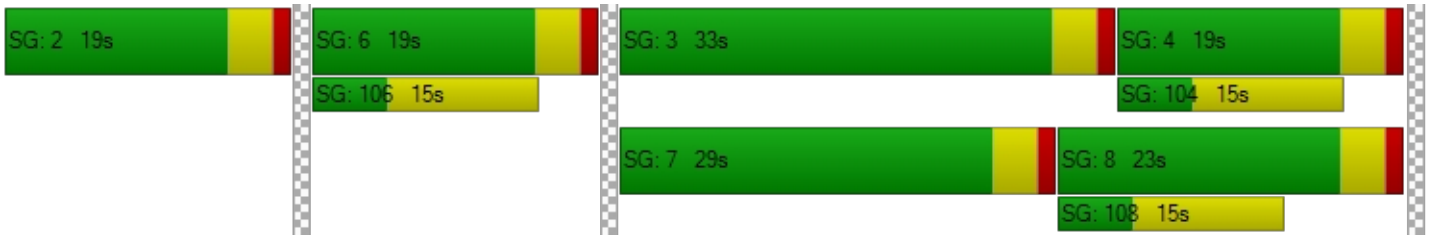
d_M, Delay for Movement [s/veh]	42.40	42.40	57.06	40.10	49.05	49.05	55.63	410.37	416.12	34.58	11.90	12.22
Movement LOS	D	D	E	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	49.89			46.73			400.74			22.10		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	173.07											
Intersection LOS	F											
Intersection V/C	0.888											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.349	2.018	2.910	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	422	333
d_b, Bicycle Delay [s]	31.25	31.25	28.01	31.25
l_b,int, Bicycle LOS Score for Intersection	2.302	1.776	2.266	2.363
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	50.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.871

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	508	30	978	273	483	611
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]	508	30	978	273	483	611
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	127	8	245	68	121	153
Total Analysis Volume [veh/h]	508	30	978	273	483	611
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	39	0	32	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	35	35	28	67
g / C, Green / Cycle	0.17	0.17	0.39	0.39	0.31	0.74
(v / s)_i Volume / Saturation Flow Rate	0.17	0.17	0.37	0.40	0.30	0.19
s, saturation flow rate [veh/h]	1603	1581	1683	1563	1603	3204
c, Capacity [veh/h]	267	264	654	608	499	2385
d1, Uniform Delay [s]	37.50	37.50	26.75	27.50	30.57	3.63
k, delay calibration	0.11	0.11	0.50	0.50	0.38	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	29.02	29.23	25.84	44.22	28.25	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.01	1.01	0.96	1.03	0.97	0.26
d, Delay for Lane Group [s/veh]	66.52	66.73	52.59	71.72	58.81	3.89
Lane Group LOS	F	F	D	F	E	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	7.91	7.82	17.04	19.79	13.83	1.41
50th-Percentile Queue Length [ft]	197.69	195.44	425.88	494.71	345.63	35.22
95th-Percentile Queue Length [veh]	12.60	12.48	23.80	27.64	19.92	2.54
95th-Percentile Queue Length [ft]	314.98	312.06	595.11	691.02	498.07	63.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	66.62	66.73	59.48	71.72	58.81	3.89
Movement LOS	E	E	E	E	E	A
d_A, Approach Delay [s/veh]	66.63		62.15		28.14	
Approach LOS	E		E		C	
d_I, Intersection Delay [s/veh]	50.08					
Intersection LOS	D					
Intersection V/C	0.871					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.020	5.164	5.035
Bicycle LOS	F	F	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.416

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	3	762	37	325	836	19	18	31	18	105	14	341
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]	3	762	37	325	836	19	18	31	18	105	14	341
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	191	9	81	209	5	5	8	5	26	4	85
Total Analysis Volume [veh/h]	3	762	37	325	836	19	18	31	18	105	14	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
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	14	19	0	33	38	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	45	45	12	56	56	4	4	13	13	13
g / C, Green / Cycle	0.00	0.50	0.50	0.13	0.63	0.63	0.05	0.05	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.00	0.16	0.17	0.10	0.25	0.26	0.02	0.02	0.07	0.12	0.12
s, saturation flow rate [veh/h]	1603	3204	1643	3113	1683	1670	1641	1392	1603	1448	1431
c, Capacity [veh/h]	8	1591	816	415	1052	1044	76	64	234	211	209
d1, Uniform Delay [s]	44.65	13.65	13.66	37.73	8.49	8.49	41.85	41.90	35.11	37.43	37.43
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.49	0.56	1.10	3.26	1.17	1.18	4.40	5.79	1.34	8.85	8.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.33	0.33	0.78	0.41	0.41	0.47	0.49	0.45	0.84	0.84
d, Delay for Lane Group [s/veh]	73.14	14.21	14.76	41.00	9.66	9.67	46.25	47.69	36.45	46.28	46.38
Lane Group LOS	E	B	B	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.13	3.18	3.40	3.60	4.07	4.04	0.85	0.78	2.16	4.28	4.24
50th-Percentile Queue Length [ft]	3.19	79.45	84.99	89.94	101.63	100.95	21.20	19.62	54.05	107.01	105.90
95th-Percentile Queue Length [veh]	0.23	5.72	6.12	6.48	7.32	7.27	1.53	1.41	3.89	7.67	7.61
95th-Percentile Queue Length [ft]	5.74	143.00	152.98	161.89	182.94	181.72	38.16	35.32	97.29	191.84	190.28

Movement, Approach, & Intersection Results

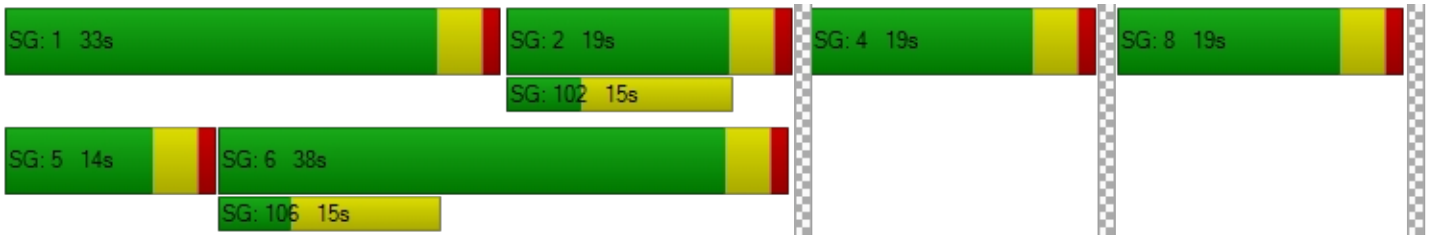
d_M, Delay for Movement [s/veh]	73.14	14.38	14.76	41.00	9.66	9.67	46.25	46.89	47.69	36.45	46.28	46.33
Movement LOS	E	B	B	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	14.61			18.29			46.93			44.07		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.61											
Intersection LOS	C											
Intersection V/C	0.416											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.975	2.468
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	756	333	333
d_b, Bicycle Delay [s]	31.25	17.42	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	2.001	2.533	1.615	2.319
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.715

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1363	333	325	1110	0	270	0	29	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1363	333	325	1110	0	270	0	29	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	341	83	81	278	0	68	0	7	0	0	0
Total Analysis Volume [veh/h]	0	1363	333	325	1110	0	270	0	29	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	29	0	42	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	48	20	72	10	10	
g / C, Green / Cycle	0.53	0.23	0.80	0.11	0.11	
(v / s)_i Volume / Saturation Flow Rate	0.43	0.20	0.24	0.09	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1691	364	3665	348	160	
d1, Uniform Delay [s]	17.47	33.70	2.39	38.88	36.25	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.22	7.61	0.21	3.75	0.54	
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	0.81	0.89	0.30	0.78	0.18	
d, Delay for Lane Group [s/veh]	21.69	41.31	2.60	42.64	36.78	
Lane Group LOS	C	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	11.56	7.47	1.11	3.04	0.60	
50th-Percentile Queue Length [ft]	288.94	186.82	27.72	75.97	14.90	
95th-Percentile Queue Length [veh]	17.13	11.96	2.00	5.47	1.07	
95th-Percentile Queue Length [ft]	428.33	298.90	49.90	136.74	26.83	

Movement, Approach, & Intersection Results

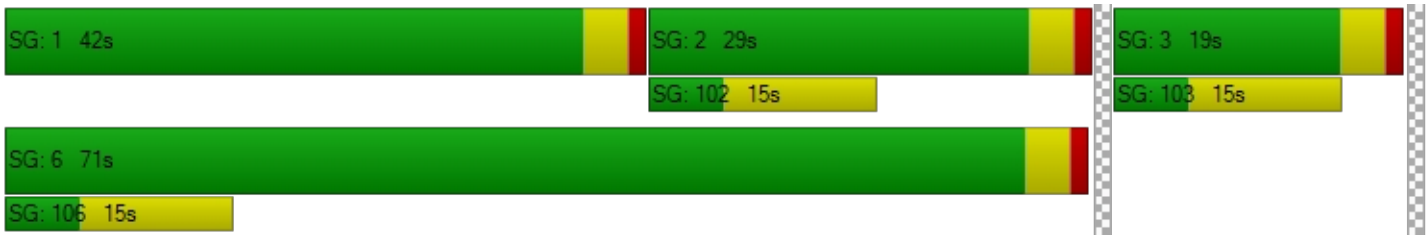
d_M, Delay for Movement [s/veh]	0.00	21.69	0.00	41.31	2.60	0.00	42.64	0.00	36.78	0.00	0.00	0.00
Movement LOS		C		D	A		D		D			
d_A, Approach Delay [s/veh]	21.69			11.37			42.07			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	18.88											
Intersection LOS	B											
Intersection V/C	0.715											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.774	0.000	2.039	1.875
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1489	0	0
d_b, Bicycle Delay [s]	23.47	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.684	2.349	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	85.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.820

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	48	1411	236	61	1389	339	537	588	458	312	204	537
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	1411	236	61	1389	339	537	588	458	312	204	537
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	353	59	15	347	85	134	147	115	78	51	134
Total Analysis Volume [veh/h]	48	1411	236	61	1389	339	537	588	458	312	204	537
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	29	0	9	29	0	0	31	0	0	21	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	17	17	4	18	18	18	36	36	36	36	17	17	17
g / C, Green / Cycle	0.04	0.19	0.19	0.05	0.20	0.20	0.20	0.40	0.40	0.40	0.40	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.22	0.04	0.22	0.22	0.23	0.24	0.24	0.24	0.35	0.19	0.12	0.21
s, saturation flow rate [veh/h]	1603	6113	1492	1603	4584	1670	1431	1603	1649	1532	1302	1603	1683	2532
c, Capacity [veh/h]	63	1164	284	76	908	331	283	634	653	606	515	303	318	478
d1, Uniform Delay [s]	42.81	36.43	36.43	42.48	36.08	36.08	36.08	21.48	21.48	21.47	25.34	36.50	33.69	36.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.21	0.15	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.97	71.89	99.23	17.92	74.23	91.12	95.20	0.89	0.87	0.93	9.90	35.99	2.16	61.89
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.76	1.14	1.15	0.81	1.13	1.13	1.14	0.59	0.59	0.59	0.89	1.03	0.64	1.12
d, Delay for Lane Group [s/veh]	59.78	108.32	135.67	60.39	110.3	127.2	131.2	22.37	22.34	22.41	35.24	72.49	35.85	98.39
Lane Group LOS	E	F	F	E	F	F	F	C	C	C	D	F	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.34	12.05	13.92	1.70	12.72	15.45	13.56	6.18	6.35	5.91	10.05	9.52	4.23	9.24
50th-Percentile Queue Length [ft]	33.58	301.18	348.06	42.59	318.1	386.3	339.0	154.4	158.7	147.6	251.1	237.98	105.72	230.98
95th-Percentile Queue Length [veh]	2.42	18.86	21.43	3.07	19.76	23.35	20.88	10.25	10.48	9.89	15.24	14.80	7.60	15.01
95th-Percentile Queue Length [ft]	60.45	471.38	535.74	76.67	494.1	583.6	521.9	256.3	262.0	247.3	381.1	369.97	190.03	375.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.78	110.06	135.67	60.39	114.67	131.28	22.36	22.38	35.24	72.49	35.85	98.39
Movement LOS	E	F	F	E	F	F	C	C	D	F	D	F
d_A, Approach Delay [s/veh]	112.20			115.93			26.10			78.60		
Approach LOS	F			F			C			E		
d_I, Intersection Delay [s/veh]	85.24											
Intersection LOS	F											
Intersection V/C	0.820											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.344	0.000	0.000	2.873
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	556	600	378
d_b, Bicycle Delay [s]	23.47	23.47	22.05	29.61
l_b,int, Bicycle LOS Score for Intersection	2.119	2.298	2.430	3.297
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.453

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	2	0	0	11	19	258	0	109	0	0	0
Total Analysis Volume [veh/h]	248	9	0	0	44	77	1032	0	434	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.45	0.00	0.00	4.19	0.07	0.64	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	2140.83	8.57	11.00	0.00	0.00	8.20	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	34.89	34.89	0.00	0.00	6.66	0.23	4.91	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	872.19	872.19	0.00	0.00	166.56	5.72	122.78	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			783.94			7.75			2.73		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1451.31											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	284	18	12	9	70	74	334	574	76	273	435	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	18	12	9	70	74	334	574	76	273	435	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	71	5	3	2	18	19	84	144	19	68	109	3
Total Analysis Volume [veh/h]	284	18	12	9	70	74	334	574	76	273	435	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	31	0	21	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	7	7	21	46	46	10	35	35
g / C, Green / Cycle	0.12	0.12	0.07	0.07	0.23	0.51	0.51	0.12	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.05	0.05	0.21	0.20	0.20	0.09	0.13	0.13
s, saturation flow rate [veh/h]	1603	1597	1673	1431	1603	1683	1615	3113	1683	1670
c, Capacity [veh/h]	195	194	125	107	373	857	823	362	661	656
d1, Uniform Delay [s]	38.49	38.49	40.42	40.62	33.47	13.49	13.49	38.52	19.12	19.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.62	7.66	5.14	7.70	7.70	1.32	1.37	3.21	1.38	1.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.81	0.63	0.69	0.90	0.39	0.39	0.75	0.34	0.34
d, Delay for Lane Group [s/veh]	46.10	46.15	45.57	48.32	41.17	14.81	14.87	41.73	20.50	20.51
Lane Group LOS	D	D	D	D	D	B	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.74	3.73	1.84	1.79	7.39	3.90	3.75	2.93	3.24	3.22
50th-Percentile Queue Length [ft]	93.48	93.23	46.00	44.81	184.71	97.43	93.81	73.37	80.94	80.40
95th-Percentile Queue Length [veh]	6.73	6.71	3.31	3.23	11.85	7.02	6.75	5.28	5.83	5.79
95th-Percentile Queue Length [ft]	168.27	167.82	82.79	80.65	296.15	175.38	168.86	132.06	145.69	144.72

Movement, Approach, & Intersection Results

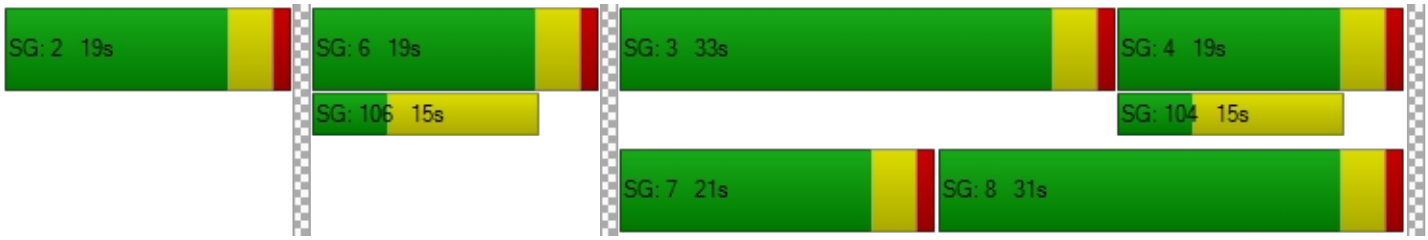
d_M, Delay for Movement [s/veh]	46.12	46.15	46.15	45.57	45.57	48.32	41.17	14.83	14.87	41.73	20.50	20.51
Movement LOS	D	D	D	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	46.13			46.90			23.77			28.57		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	30.23											
Intersection LOS	C											
Intersection V/C	0.491											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.137	2.821	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	600	333
d_b, Bicycle Delay [s]	31.25	31.25	22.05	31.25
l_b,int, Bicycle LOS Score for Intersection	2.078	1.812	2.371	2.152
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	199	6	371	21	17	13	0	321	40	617	899	11
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]	199	6	371	21	17	13	0	321	40	617	899	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	2	93	5	4	3	0	80	10	154	225	3
Total Analysis Volume [veh/h]	199	6	371	21	17	13	0	321	40	617	899	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	19	0	9	19	0	23	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	4	4	0	9	9	37	46	46
g / C, Green / Cycle	0.28	0.28	0.04	0.04	0.00	0.10	0.10	0.41	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.13	0.26	0.01	0.02	0.00	0.07	0.08	0.38	0.19	0.19
s, saturation flow rate [veh/h]	1605	1431	1603	1563	1603	3204	1591	1603	3204	1673
c, Capacity [veh/h]	443	395	64	63	0	308	153	657	1621	846
d1, Uniform Delay [s]	27.03	31.83	42.01	42.28	0.00	39.71	39.82	25.49	13.50	13.50
k, delay calibration	0.11	0.29	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	0.75	22.30	2.91	5.56	0.00	17.11	33.92	7.35	0.65	1.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.94	0.33	0.48	0.00	0.77	0.80	0.94	0.37	0.37
d, Delay for Lane Group [s/veh]	27.78	54.13	44.92	47.84	0.00	56.82	73.73	32.85	14.15	14.74
Lane Group LOS	C	D	D	D	A	E	E	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.67	10.07	0.50	0.74	0.00	3.28	4.06	13.24	3.62	3.92
50th-Percentile Queue Length [ft]	91.69	251.67	12.53	18.57	0.00	81.89	101.39	331.05	90.62	98.07
95th-Percentile Queue Length [veh]	6.60	15.27	0.90	1.34	0.00	5.90	7.30	19.21	6.52	7.06
95th-Percentile Queue Length [ft]	165.04	381.75	22.56	33.42	0.00	147.40	182.49	480.25	163.12	176.53

Movement, Approach, & Intersection Results

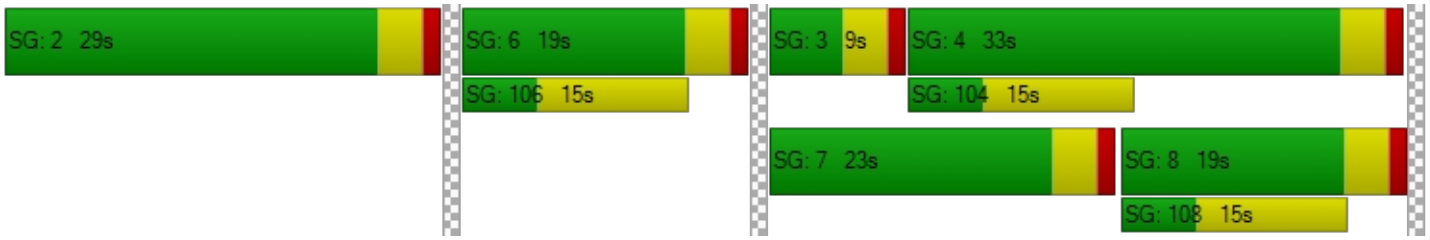
d_M, Delay for Movement [s/veh]	27.78	27.78	54.13	44.92	47.84	47.84	0.00	61.16	73.73	32.85	14.35	14.74
Movement LOS	C	C	D	D	D	D	A	E	E	C	B	B
d_A, Approach Delay [s/veh]	44.75			46.64			62.55			21.83		
Approach LOS	D			D			E			C		
d_I, Intersection Delay [s/veh]	33.43											
Intersection LOS	C											
Intersection V/C	0.740											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.348	1.964	2.800	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	333	333	644
d_b, Bicycle Delay [s]	23.47	31.25	31.25	20.67
l_b,int, Bicycle LOS Score for Intersection	2.510	1.644	1.758	2.399
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	48.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.876

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	749	11	586	199	616	1126
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]	749	11	586	199	616	1126
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	187	3	147	50	154	282
Total Analysis Volume [veh/h]	749	11	586	199	616	1126
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	27	0	38	65
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	23	23	34	61
g / C, Green / Cycle	0.23	0.23	0.26	0.26	0.38	0.68
(v / s)_i Volume / Saturation Flow Rate	0.24	0.24	0.23	0.25	0.38	0.35
s, saturation flow rate [veh/h]	1603	1597	1683	1545	1603	3204
c, Capacity [veh/h]	374	373	430	395	606	2172
d1, Uniform Delay [s]	34.50	34.50	32.52	33.43	28.00	7.20
k, delay calibration	0.24	0.24	0.50	0.50	0.47	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	36.60	36.99	26.22	43.89	39.84	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.02	1.02	0.91	0.99	1.02	0.52
d, Delay for Lane Group [s/veh]	71.10	71.49	58.74	77.32	67.84	8.09
Lane Group LOS	F	F	E	E	F	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	11.75	11.74	11.18	13.09	19.03	4.76
50th-Percentile Queue Length [ft]	293.63	293.61	279.56	327.21	475.83	118.92
95th-Percentile Queue Length [veh]	17.53	17.54	16.67	19.02	26.51	8.33
95th-Percentile Queue Length [ft]	438.32	438.54	416.67	475.54	662.63	208.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	71.29	71.49	64.88	77.32	67.84	8.09
Movement LOS	F	E	E	E	F	A
d_A, Approach Delay [s/veh]	71.29		68.03		29.22	
Approach LOS	E		E		C	
d_I, Intersection Delay [s/veh]	48.22					
Intersection LOS	D					
Intersection V/C	0.876					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.386	4.780	5.570
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	4	643	41	229	518	13	4	70	3	300	11	550
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	643	41	229	518	13	4	70	3	300	11	550
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	161	10	57	130	3	1	18	1	75	3	138
Total Analysis Volume [veh/h]	4	643	41	229	518	13	4	70	3	300	11	550
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	12	20	0	0	19	0	0	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	41	41	8	48	48	4	4	21	21	21
g / C, Green / Cycle	0.01	0.45	0.45	0.09	0.53	0.53	0.05	0.05	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.00	0.14	0.14	0.07	0.16	0.16	0.02	0.02	0.19	0.20	0.20
s, saturation flow rate [veh/h]	1603	3204	1632	3113	1683	1669	1675	1510	1603	1439	1431
c, Capacity [veh/h]	9	1445	736	277	899	891	81	73	375	337	335
d1, Uniform Delay [s]	44.59	15.79	15.81	40.32	11.61	11.61	41.76	41.77	32.49	32.82	32.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.81	0.57	1.12	6.25	0.84	0.85	4.66	5.24	3.98	5.43	5.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.31	0.32	0.83	0.30	0.30	0.50	0.50	0.80	0.83	0.84
d, Delay for Lane Group [s/veh]	72.40	16.35	16.93	46.57	12.45	12.46	46.42	47.01	36.47	38.25	38.40
Lane Group LOS	E	B	B	D	B	B	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.16	2.96	3.16	2.70	2.98	2.96	0.97	0.89	6.42	6.19	6.18
50th-Percentile Queue Length [ft]	4.02	74.02	78.97	67.47	74.49	73.93	24.24	22.31	160.49	154.65	154.61
95th-Percentile Queue Length [veh]	0.29	5.33	5.69	4.86	5.36	5.32	1.75	1.61	10.58	10.27	10.26
95th-Percentile Queue Length [ft]	7.23	133.24	142.14	121.44	134.07	133.07	43.63	40.15	264.38	256.63	256.57

Movement, Approach, & Intersection Results

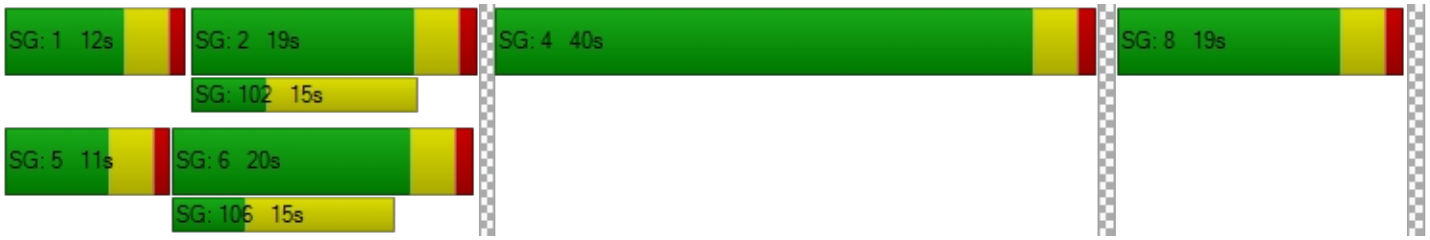
d_M, Delay for Movement [s/veh]	72.40	16.52	16.93	46.57	12.45	12.46	46.42	46.70	47.01	36.47	38.25	38.32
Movement LOS	E	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.87			22.73			46.70			37.68		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	27.21											
Intersection LOS	C											
Intersection V/C	0.436											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.976	2.536
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	356	333	800
d_b, Bicycle Delay [s]	31.25	30.42	31.25	16.20
l_b,int, Bicycle LOS Score for Intersection	1.938	2.187	1.623	2.980
Bicycle LOS	A	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	750	149	104	1418	0	792	0	132	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	750	149	104	1418	0	792	0	132	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	188	37	26	355	0	198	0	33	0	0	0
Total Analysis Volume [veh/h]	0	750	149	104	1418	0	792	0	132	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	26	0	11	37	0	53	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	44	7	55	27	27	
g / C, Green / Cycle	0.49	0.08	0.62	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.23	0.06	0.31	0.25	0.09	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1578	125	2818	922	424	
d1, Uniform Delay [s]	15.13	40.93	9.67	29.89	24.55	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.03	13.32	0.64	2.47	0.41	
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	0.48	0.83	0.50	0.86	0.31	
d, Delay for Lane Group [s/veh]	16.16	54.25	10.31	32.35	24.96	
Lane Group LOS	B	D	B	C	C	
Critical Lane Group	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	5.02	2.70	4.77	8.14	2.19	
50th-Percentile Queue Length [ft]	125.41	67.62	119.34	203.41	54.75	
95th-Percentile Queue Length [veh]	8.69	4.87	8.36	12.81	3.94	
95th-Percentile Queue Length [ft]	217.23	121.71	208.92	320.36	98.55	

Movement, Approach, & Intersection Results

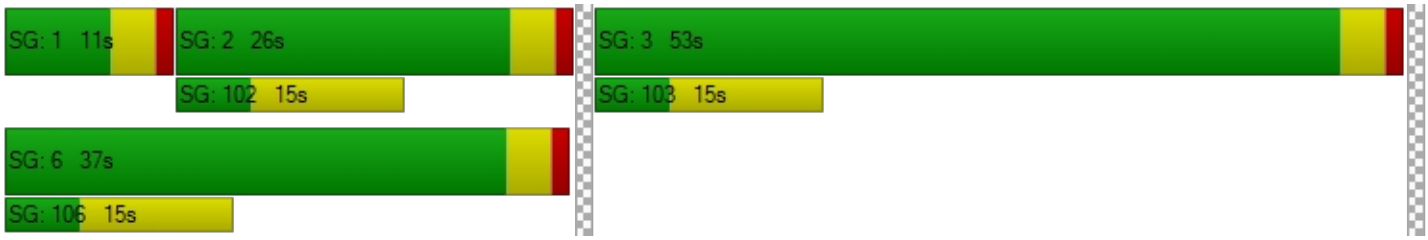
d_M, Delay for Movement [s/veh]	0.00	16.16	0.00	54.25	10.31	0.00	32.35	0.00	24.96	0.00	0.00	0.00
Movement LOS		B		D	B		C		C			
d_A, Approach Delay [s/veh]		16.16			13.32			31.30			0.00	
Approach LOS		B			B			C			A	
d_I, Intersection Delay [s/veh]						19.18						
Intersection LOS						B						
Intersection V/C						0.564						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.764	0.000	2.242	1.767
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	733	0	0
d_b, Bicycle Delay [s]	25.69	18.05	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.178	2.397	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	46.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	101	1614	373	80	814	974	233	756	150	178	323	318
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]	101	1614	373	80	814	974	233	756	150	178	323	318
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	404	93	20	204	244	58	189	38	45	81	80
Total Analysis Volume [veh/h]	101	1614	373	80	814	974	233	756	150	178	323	318
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	39	0	9	38	0	0	22	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	30	30	5	29	29	29	23	23	23	23	16	16	16
g / C, Green / Cycle	0.07	0.33	0.33	0.06	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.06	0.26	0.26	0.05	0.18	0.34	0.34	0.15	0.22	0.18	0.18	0.11	0.19	0.13
s, saturation flow rate [veh/h]	1603	6113	1434	1603	4584	1431	1431	1603	1683	1532	1388	1603	1683	2532
c, Capacity [veh/h]	107	2018	473	89	1462	456	456	415	436	396	359	285	299	450
d1, Uniform Delay [s]	41.84	27.41	27.43	42.25	25.37	30.64	30.64	28.93	31.69	30.27	30.30	34.22	37.00	34.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.14	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.90	3.38	13.23	24.98	1.53	61.18	61.18	1.19	4.70	2.34	2.62	2.24	51.58	2.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	1.00

Lane Group Results

X, volume / capacity	0.95	0.80	0.80	0.90	0.56	1.07	1.07	0.56	0.85	0.71	0.71	0.62	1.08	0.71
d, Delay for Lane Group [s/veh]	70.74	30.79	40.67	67.22	26.91	91.83	91.83	30.12	36.39	32.61	32.92	36.46	88.58	36.84
Lane Group LOS	E	C	D	E	C	F	F	C	D	C	C	D	F	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.06	8.05	8.88	2.36	4.88	17.25	17.25	4.40	7.97	5.63	5.15	3.72	10.72	3.34
50th-Percentile Queue Length [ft]	76.55	201.35	221.99	59.08	122.0	431.2	431.2	109.9	199.3	140.6	128.8	92.90	267.93	83.53
95th-Percentile Queue Length [veh]	5.51	12.71	13.77	4.25	8.50	25.06	25.06	7.83	12.60	9.52	8.87	6.69	16.69	6.01
95th-Percentile Queue Length [ft]	137.80	317.71	344.16	106.3	212.6	626.6	626.6	195.8	315.1	237.8	221.8	167.22	417.21	150.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.74	30.82	40.67	67.22	26.91	91.83	30.12	34.50	32.92	36.46	88.58	36.84
Movement LOS	E	C	D	E	C	F	C	C	C	D	F	D
d_A, Approach Delay [s/veh]	34.51			62.48			33.40			57.16		
Approach LOS	C			E			C			E		
d_I, Intersection Delay [s/veh]	46.27											
Intersection LOS	D											
Intersection V/C	0.815											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.283	0.000	0.000	2.877
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	756	400	356
d_b, Bicycle Delay [s]	16.81	17.42	28.80	30.42
l_b,int, Bicycle LOS Score for Intersection	2.249	2.330	2.186	2.911
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	302	2	0	0	160	623	591	0	137	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	2	0	0	160	623	591	0	137	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	1	0	0	40	156	148	0	34	0	0	0
Total Analysis Volume [veh/h]	302	2	0	0	160	623	591	0	137	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	1.60	0.57	0.36	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	387.25	12.69	8.48	0.00	0.00	7.49	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	40.79	40.79	0.00	0.00	12.37	3.80	1.70	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	1019.86	1019.86	0.00	0.00	309.24	94.90	42.39	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			89.23			6.89			2.50		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1716.19											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	59.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.805

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	292	12	32	26	273	365	190	939	139	361	780	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	292	12	32	26	273	365	190	939	139	361	780	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	3	8	7	68	91	48	235	35	90	195	2
Total Analysis Volume [veh/h]	292	12	32	26	273	365	190	939	139	361	780	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	22	0	16	37	0	12	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	21	21	12	28	28	13	29	29
g / C, Green / Cycle	0.13	0.13	0.24	0.24	0.14	0.31	0.31	0.15	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.18	0.26	0.12	0.33	0.33	0.12	0.23	0.23
s, saturation flow rate [veh/h]	1603	1572	1676	1431	1603	1683	1608	3113	1683	1676
c, Capacity [veh/h]	207	203	395	338	219	525	502	452	539	537
d1, Uniform Delay [s]	38.18	38.18	31.97	34.38	38.05	30.97	30.97	37.18	27.16	27.16
k, delay calibration	0.11	0.11	0.11	0.28	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.80	8.01	3.01	60.41	9.92	52.49	54.69	3.28	8.55	8.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.82	0.76	1.08	0.87	1.05	1.05	0.80	0.73	0.73
d, Delay for Lane Group [s/veh]	45.98	46.20	34.98	94.79	47.97	83.46	85.65	40.46	35.70	35.74
Lane Group LOS	D	D	C	F	D	F	F	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.03	3.97	6.14	12.72	4.49	18.07	17.58	3.84	8.21	8.19
50th-Percentile Queue Length [ft]	100.73	99.25	153.54	318.06	112.30	451.84	439.42	95.99	205.33	204.67
95th-Percentile Queue Length [veh]	7.25	7.15	10.21	19.37	7.97	25.81	25.26	6.91	12.91	12.88
95th-Percentile Queue Length [ft]	181.31	178.64	255.15	484.30	199.20	645.20	631.43	172.77	322.83	321.98

Movement, Approach, & Intersection Results

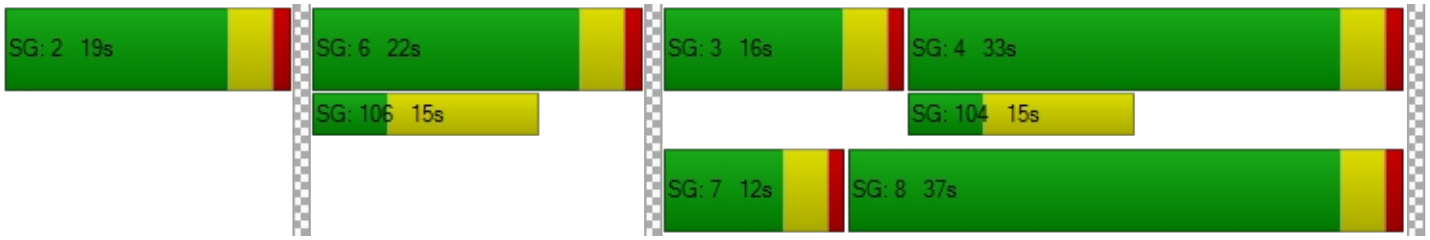
d_M, Delay for Movement [s/veh]	46.07	46.20	46.20	34.98	34.98	94.79	47.97	84.37	85.65	40.46	35.72	35.74
Movement LOS	D	D	D	C	C	F	D	F	F	D	D	D
d_A, Approach Delay [s/veh]	46.09			67.86			79.05			37.21		
Approach LOS	D			E			E			D		
d_I, Intersection Delay [s/veh]	59.56											
Intersection LOS	E											
Intersection V/C	0.805											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.273	3.093	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	400	733	644
d_b, Bicycle Delay [s]	31.25	28.80	18.05	20.67
l_b,int, Bicycle LOS Score for Intersection	2.114	2.655	2.606	2.508
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	335.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	121	15	262	39	90	21	41	1033	62	743	612	63
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]	121	15	262	39	90	21	41	1033	62	743	612	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	4	66	10	23	5	10	258	16	186	153	16
Total Analysis Volume [veh/h]	121	15	262	39	90	21	41	1033	62	743	612	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	20	0	32	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	8	8	3	7	7	44	48	48
g / C, Green / Cycle	0.17	0.17	0.09	0.09	0.04	0.08	0.08	0.49	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.02	0.07	0.03	0.23	0.23	0.46	0.14	0.14
s, saturation flow rate [veh/h]	1611	1431	1603	1629	1603	3204	1635	1603	3204	1604
c, Capacity [veh/h]	269	238	142	144	59	255	130	781	1699	850
d1, Uniform Delay [s]	34.13	37.50	38.30	40.11	42.85	41.42	41.42	22.05	11.56	11.56
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.20	0.50	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
d2, Incremental Delay [s]	1.48	59.53	1.03	8.28	13.75	839.49	851.35	11.60	0.38	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	1.10	0.27	0.77	0.70	2.84	2.85	0.95	0.26	0.26
d, Delay for Lane Group [s/veh]	35.61	97.03	39.34	48.39	56.60	880.91	892.77	33.65	11.94	12.32
Lane Group LOS	D	F	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	2.78	9.08	0.84	2.70	1.12	32.53	33.62	16.24	2.40	2.50
50th-Percentile Queue Length [ft]	69.41	226.96	20.91	67.57	27.94	813.23	840.43	406.06	60.12	62.42
95th-Percentile Queue Length [veh]	5.00	14.63	1.51	4.86	2.01	51.14	52.70	22.85	4.33	4.49
95th-Percentile Queue Length [ft]	124.93	365.72	37.63	121.62	50.28	1278.57	1317.45	571.30	108.21	112.36

Movement, Approach, & Intersection Results

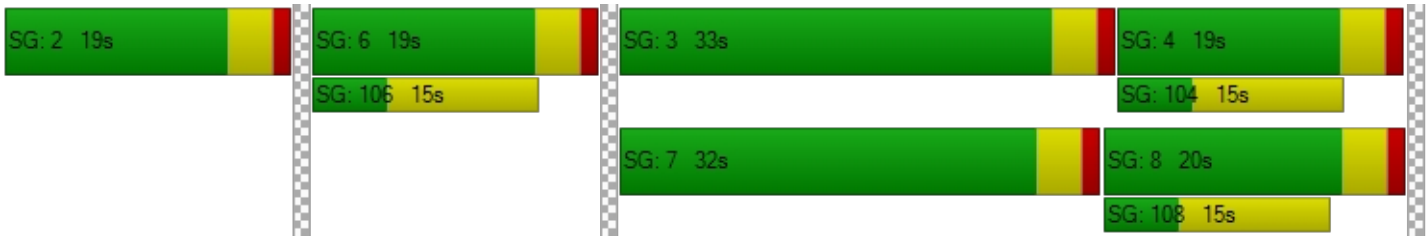
d_M, Delay for Movement [s/veh]	35.61	35.61	97.03	39.34	48.39	48.39	56.60	884.45	892.77	33.65	12.04	12.32
Movement LOS	D	D	F	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	76.04			46.03			855.02			23.38		
Approach LOS	E			D			F			C		
d_I, Intersection Delay [s/veh]	335.79											
Intersection LOS	F											
Intersection V/C	0.941											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.362	2.029	2.859	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	356	333
d_b, Bicycle Delay [s]	31.25	31.25	30.42	31.25
I_b,int, Bicycle LOS Score for Intersection	2.216	1.807	2.184	2.340
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	76.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.968

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	558	34	1064	309	548	651
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]	558	34	1064	309	548	651
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	9	266	77	137	163
Total Analysis Volume [veh/h]	558	34	1064	309	548	651
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	39	0	32	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	35	35	28	67
g / C, Green / Cycle	0.17	0.17	0.39	0.39	0.31	0.74
(v / s)_i Volume / Saturation Flow Rate	0.19	0.19	0.41	0.44	0.34	0.20
s, saturation flow rate [veh/h]	1603	1581	1683	1559	1603	3204
c, Capacity [veh/h]	267	263	654	606	499	2385
d1, Uniform Delay [s]	37.50	37.50	27.50	27.50	31.00	3.69
k, delay calibration	0.13	0.13	0.50	0.50	0.47	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	65.01	65.45	48.68	78.71	68.88	0.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	1.12	1.05	1.13	1.10	0.27
d, Delay for Lane Group [s/veh]	102.51	102.95	76.18	106.21	99.88	3.97
Lane Group LOS	F	F	F	F	F	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	10.58	10.46	22.12	25.55	19.92	1.53
50th-Percentile Queue Length [ft]	264.45	261.62	553.07	638.85	497.99	38.13
95th-Percentile Queue Length [veh]	16.73	16.58	30.86	36.78	28.88	2.75
95th-Percentile Queue Length [ft]	418.18	414.52	771.41	919.55	722.07	68.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	102.71	102.95	86.83	106.21	99.88	3.97
Movement LOS	F	F	F	F	F	A
d_A, Approach Delay [s/veh]	102.73		91.19		47.81	
Approach LOS	F		F		D	
d_I, Intersection Delay [s/veh]	76.91					
Intersection LOS	E					
Intersection V/C	0.968					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.109	5.265	5.122
Bicycle LOS	F	F	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.389

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	3	816	43	338	903	22	21	35	20	120	16	207
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]	3	816	43	338	903	22	21	35	20	120	16	207
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	204	11	85	226	6	5	9	5	30	4	52
Total Analysis Volume [veh/h]	3	816	43	338	903	22	21	35	20	120	16	207
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	14	19	0	33	38	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	48	48	12	60	60	4	4	9	9	9
g / C, Green / Cycle	0.00	0.53	0.53	0.14	0.67	0.67	0.05	0.05	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.18	0.18	0.11	0.28	0.28	0.02	0.03	0.07	0.08	0.08
s, saturation flow rate [veh/h]	1603	3204	1640	3113	1683	1669	1640	1395	1603	1462	1431
c, Capacity [veh/h]	8	1709	875	429	1121	1112	79	67	165	150	147
d1, Uniform Delay [s]	44.65	11.91	11.92	37.53	6.92	6.92	41.79	41.85	39.14	39.23	39.24
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.49	0.52	1.03	3.26	1.13	1.14	4.94	6.48	5.99	7.22	7.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.33	0.33	0.79	0.41	0.41	0.51	0.54	0.73	0.75	0.75
d, Delay for Lane Group [s/veh]	73.14	12.43	12.95	40.80	8.05	8.07	46.72	48.33	45.13	46.46	46.65
Lane Group LOS	E	B	B	D	A	A	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.13	3.14	3.36	3.74	3.84	3.81	0.97	0.89	2.81	2.69	2.64
50th-Percentile Queue Length [ft]	3.19	78.58	83.91	93.40	95.89	95.27	24.15	22.36	70.25	67.17	66.03
95th-Percentile Queue Length [veh]	0.23	5.66	6.04	6.72	6.90	6.86	1.74	1.61	5.06	4.84	4.75
95th-Percentile Queue Length [ft]	5.74	141.44	151.03	168.12	172.61	171.48	43.47	40.24	126.44	120.90	118.86

Movement, Approach, & Intersection Results

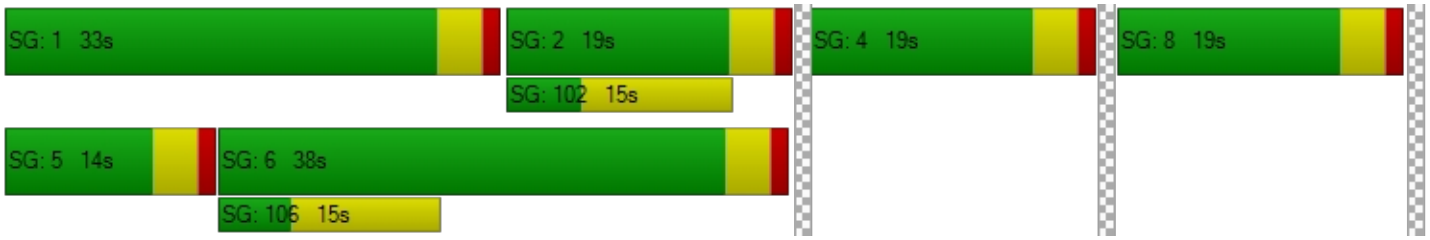
d_M, Delay for Movement [s/veh]	73.14	12.59	12.95	40.80	8.06	8.07	46.72	47.46	48.33	45.13	46.46	46.56
Movement LOS	E	B	B	D	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	12.82			16.82			47.48			46.06		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	20.32											
Intersection LOS	C											
Intersection V/C	0.389											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.980	2.449
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	756	333	333
d_b, Bicycle Delay [s]	31.25	17.42	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	2.034	2.602	1.622	2.126
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	17.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1484	379	265	1186	0	278	0	33	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1484	379	265	1186	0	278	0	33	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	371	95	66	297	0	70	0	8	0	0	0
Total Analysis Volume [veh/h]	0	1484	379	265	1186	0	278	0	33	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	28	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	51	17	72	10	10	
g / C, Green / Cycle	0.56	0.19	0.80	0.11	0.11	
(v / s)_i Volume / Saturation Flow Rate	0.46	0.17	0.26	0.09	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1807	301	3651	357	164	
d1, Uniform Delay [s]	15.95	35.55	2.52	38.72	36.09	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.35	8.17	0.24	3.68	0.59	
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	0.82	0.88	0.32	0.78	0.20	
d, Delay for Lane Group [s/veh]	20.29	43.72	2.76	42.40	36.69	
Lane Group LOS	C	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	12.14	6.22	1.25	3.12	0.68	
50th-Percentile Queue Length [ft]	303.44	155.43	31.26	78.05	16.94	
95th-Percentile Queue Length [veh]	17.85	10.31	2.25	5.62	1.22	
95th-Percentile Queue Length [ft]	446.28	257.66	56.26	140.50	30.50	

Movement, Approach, & Intersection Results

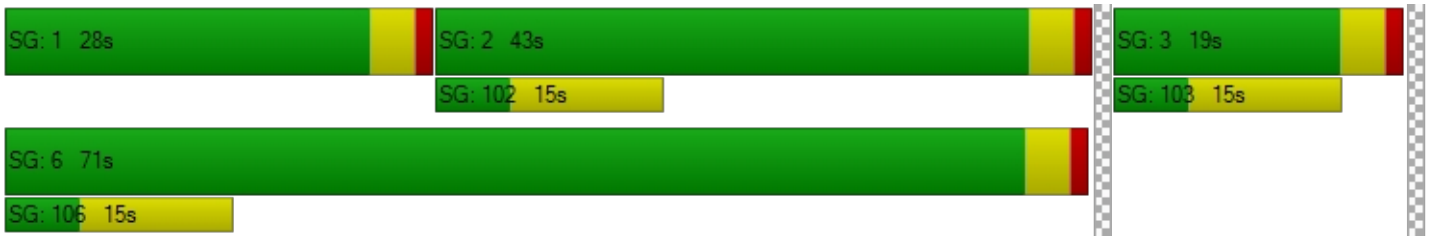
d_M, Delay for Movement [s/veh]	0.00	20.29	0.00	43.72	2.76	0.00	42.40	0.00	36.69	0.00	0.00	0.00
Movement LOS		C		D	A		D		D			
d_A, Approach Delay [s/veh]	20.29			10.24			41.79			0.00		
Approach LOS	C			B			D			A		
d_I, Intersection Delay [s/veh]	17.86											
Intersection LOS	B											
Intersection V/C	0.718											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.784	0.000	2.043	1.846
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	867	1489	0	0
d_b, Bicycle Delay [s]	14.45	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.784	2.358	4.132	4.132
Bicycle LOS	C	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	164.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.923

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	55	1545	270	66	1515	377	604	667	522	356	228	609
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]	55	1545	270	66	1515	377	604	667	522	356	228	609
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	386	68	17	379	94	151	167	131	89	57	152
Total Analysis Volume [veh/h]	55	1545	270	66	1515	377	604	667	522	356	228	609
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	34	0	9	34	0	0	28	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	5	16	16	16	39	39	39	39	15	15	15
g / C, Green / Cycle	0.04	0.17	0.17	0.05	0.18	0.18	0.18	0.44	0.44	0.44	0.44	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.24	0.04	0.25	0.25	0.25	0.27	0.27	0.27	0.40	0.22	0.14	0.24
s, saturation flow rate [veh/h]	1603	6113	1485	1603	4584	1665	1431	1603	1650	1532	1302	1603	1683	2532
c, Capacity [veh/h]	68	1035	251	82	816	297	255	698	718	667	567	267	280	422
d1, Uniform Delay [s]	42.76	37.38	37.38	42.28	36.99	36.99	36.99	19.55	19.54	19.53	23.95	37.50	36.15	37.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.13	0.13	0.13	0.34	0.21	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.35	190.05	210.03	16.85	180.1	192.1	195.0	1.07	1.03	1.11	17.21	160.07	5.64	202.35
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.81	1.41	1.42	0.81	1.38	1.38	1.38	0.61	0.61	0.61	0.92	1.33	0.81	1.44
d, Delay for Lane Group [s/veh]	63.10	227.43	247.41	59.13	217.0	229.1	232.0	20.62	20.57	20.64	41.17	197.57	41.79	239.85
Lane Group LOS	E	F	F	E	F	F	F	C	C	C	D	F	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.58	19.23	20.08	1.82	19.47	22.21	19.28	6.73	6.90	6.41	12.49	17.63	5.17	16.41
50th-Percentile Queue Length [ft]	39.53	480.76	501.92	45.42	486.6	555.1	481.9	168.1	172.5	160.3	312.2	440.81	129.34	410.13
95th-Percentile Queue Length [veh]	2.85	30.46	31.70	3.27	30.68	34.48	30.42	10.98	11.21	10.57	18.28	27.72	8.90	26.65
95th-Percentile Queue Length [ft]	71.16	761.52	792.52	81.75	767.0	861.9	760.6	274.5	280.2	264.1	457.1	693.08	222.59	666.36

Movement, Approach, & Intersection Results

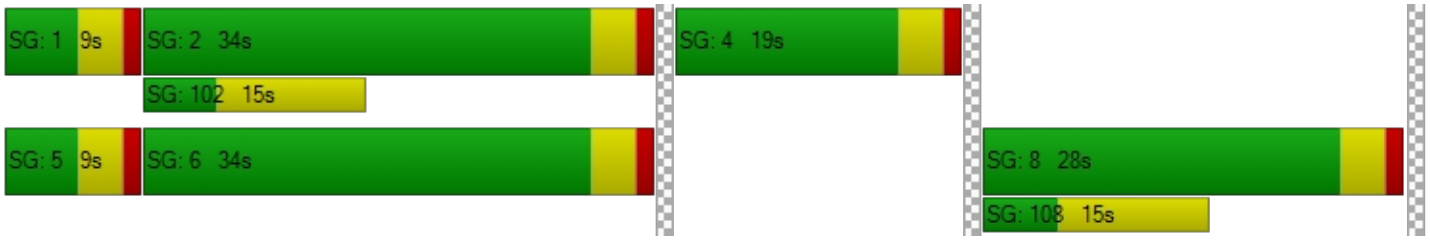
d_M, Delay for Movement [s/veh]	63.10	228.55	247.41	59.13	220.15	232.02	20.61	20.61	41.17	197.57	41.79	239.85
Movement LOS	E	F	F	E	F	F	C	C	D	F	D	F
d_A, Approach Delay [s/veh]	226.41			216.97			26.59			189.38		
Approach LOS	F			F			C			F		
d_I, Intersection Delay [s/veh]	164.64											
Intersection LOS	F											
Intersection V/C	0.923											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.384	0.000	0.000	2.884
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	667	533	333
d_b, Bicycle Delay [s]	20.00	20.00	24.20	31.25
l_b,int, Bicycle LOS Score for Intersection	2.177	2.367	2.546	3.528
Bicycle LOS	B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.799

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	272	10	0	0	49	87	1129	0	488	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	272	10	0	0	49	87	1129	0	488	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	3	0	0	12	22	282	0	122	0	0	0
Total Analysis Volume [veh/h]	272	10	0	0	49	87	1129	0	488	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.80	0.00	0.00	8.08	0.08	0.70	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	4355.99	8.61	12.11	0.00	0.00	8.35	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	38.03	38.03	0.00	0.00	7.74	0.26	6.23	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	950.77	950.77	0.00	0.00	193.51	6.52	155.68	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			1574.94			8.46			2.78		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1497.72											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	30.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	284	18	24	9	77	81	361	721	76	315	495	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	284	18	24	9	77	81	361	721	76	315	495	10
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	71	5	6	2	19	20	90	180	19	79	124	3
Total Analysis Volume [veh/h]	284	18	24	9	77	81	361	721	76	315	495	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	31	0	21	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	7	7	22	44	44	12	33	33
g / C, Green / Cycle	0.13	0.13	0.08	0.08	0.25	0.49	0.49	0.13	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.05	0.06	0.23	0.24	0.24	0.10	0.15	0.15
s, saturation flow rate [veh/h]	1603	1583	1674	1431	1603	1683	1627	3113	1683	1671
c, Capacity [veh/h]	202	199	134	115	400	818	791	406	618	613
d1, Uniform Delay [s]	38.31	38.31	40.14	40.36	32.73	15.67	15.67	37.85	21.23	21.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	7.68	7.82	5.02	7.72	7.71	2.14	2.22	3.20	2.01	2.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.81	0.64	0.71	0.90	0.50	0.50	0.78	0.41	0.41
d, Delay for Lane Group [s/veh]	45.99	46.13	45.16	48.08	40.44	17.81	17.89	41.06	23.24	23.26
Lane Group LOS	D	D	D	D	D	B	B	D	C	C
Critical Lane Group	No	Yes	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh]	3.89	3.86	1.99	1.95	7.94	5.43	5.27	3.37	4.00	3.97
50th-Percentile Queue Length [ft]	97.37	96.48	49.78	48.86	198.49	135.70	131.83	84.16	99.92	99.31
95th-Percentile Queue Length [veh]	7.01	6.95	3.58	3.52	12.56	9.25	9.04	6.06	7.19	7.15
95th-Percentile Queue Length [ft]	175.27	173.66	89.60	87.94	314.01	231.22	225.98	151.48	179.86	178.75

Movement, Approach, & Intersection Results

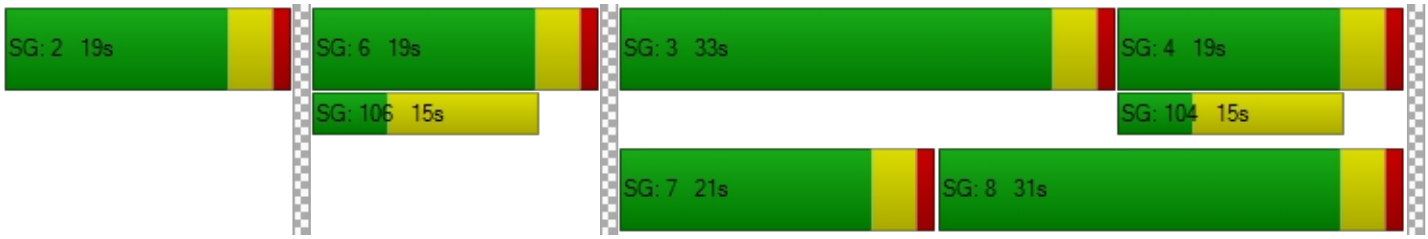
d_M, Delay for Movement [s/veh]	46.05	46.13	46.13	45.16	45.16	48.08	40.44	17.85	17.89	41.06	23.25	23.26
Movement LOS	D	D	D	D	D	D	D	B	B	D	C	C
d_A, Approach Delay [s/veh]	46.06			46.58			24.89			30.09		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	30.88											
Intersection LOS	C											
Intersection V/C	0.535											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.153	2.892	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	600	333
d_b, Bicycle Delay [s]	31.25	31.25	22.05	31.25
l_b,int, Bicycle LOS Score for Intersection	2.098	1.835	2.515	2.236
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	41.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	234	6	371	21	17	13	0	427	42	619	993	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	6	371	21	17	13	0	427	42	619	993	11
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	2	93	5	4	3	0	107	11	155	248	3
Total Analysis Volume [veh/h]	234	6	371	21	17	13	0	427	42	619	993	11
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	29	0	0	19	0	9	19	0	23	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	25	4	4	0	9	9	37	46	46
g / C, Green / Cycle	0.28	0.28	0.04	0.04	0.00	0.09	0.09	0.41	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.15	0.26	0.01	0.02	0.00	0.10	0.10	0.39	0.21	0.21
s, saturation flow rate [veh/h]	1605	1431	1603	1563	1603	3204	1608	1603	3204	1674
c, Capacity [veh/h]	443	395	64	63	0	304	153	659	1621	847
d1, Uniform Delay [s]	27.72	31.83	42.01	42.28	0.00	40.73	40.73	25.44	13.83	13.83
k, delay calibration	0.11	0.29	0.11	0.11	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	1.03	22.28	2.91	5.56	0.00	56.46	83.84	7.43	0.76	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.94	0.33	0.48	0.00	1.02	1.04	0.94	0.41	0.41
d, Delay for Lane Group [s/veh]	28.75	54.11	44.92	47.84	0.00	97.19	124.57	32.87	14.59	15.28
Lane Group LOS	C	D	D	D	A	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.42	10.06	0.50	0.74	0.00	5.71	6.89	13.29	4.10	4.45
50th-Percentile Queue Length [ft]	110.49	251.62	12.53	18.57	0.00	142.72	172.28	332.27	102.55	111.19
95th-Percentile Queue Length [veh]	7.87	15.27	0.90	1.34	0.00	9.69	11.36	19.27	7.38	7.91
95th-Percentile Queue Length [ft]	196.68	381.69	22.56	33.42	0.00	242.31	284.03	481.75	184.59	197.65

Movement, Approach, & Intersection Results

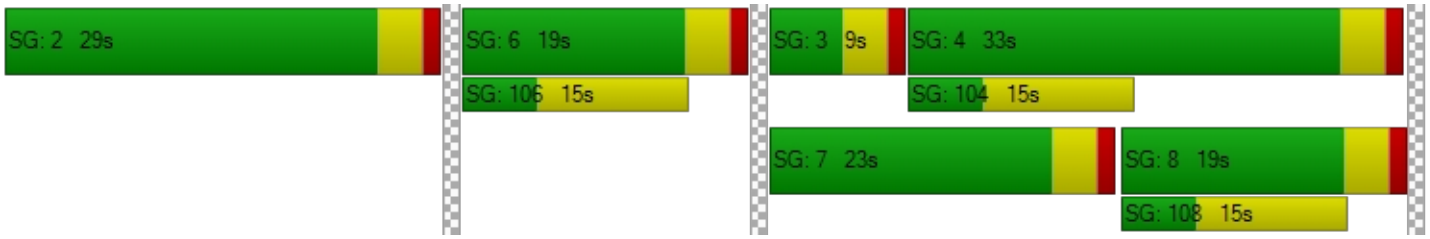
d_M, Delay for Movement [s/veh]	28.75	28.75	54.11	44.92	47.84	47.84	0.00	104.68	124.57	32.87	14.82	15.28
Movement LOS	C	C	D	D	D	D	A	F	F	C	B	B
d_A, Approach Delay [s/veh]	44.15			46.64			106.46			21.71		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	41.58											
Intersection LOS	D											
Intersection V/C	0.764											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.361	1.964	2.833	0.000
Crosswalk LOS	B	A	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	333	333	644
d_b, Bicycle Delay [s]	23.47	31.25	31.25	20.67
I_b,int, Bicycle LOS Score for Intersection	2.568	1.644	1.818	2.452
Bicycle LOS	B	A	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	52.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	779	11	597	199	616	1147
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]	779	11	597	199	616	1147
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	3	149	50	154	287
Total Analysis Volume [veh/h]	779	11	597	199	616	1147
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	25	0	27	0	38	65
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	21	23	23	34	61
g / C, Green / Cycle	0.23	0.23	0.26	0.26	0.38	0.68
(v / s)_i Volume / Saturation Flow Rate	0.25	0.25	0.24	0.26	0.38	0.36
s, saturation flow rate [veh/h]	1603	1597	1683	1547	1603	3204
c, Capacity [veh/h]	374	373	430	395	606	2172
d1, Uniform Delay [s]	34.50	34.50	32.66	33.50	28.00	7.28
k, delay calibration	0.26	0.26	0.50	0.50	0.47	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	49.72	50.24	28.21	47.04	39.84	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.06	1.06	0.93	1.01	1.02	0.53
d, Delay for Lane Group [s/veh]	84.22	84.74	60.87	80.54	67.84	8.20
Lane Group LOS	F	F	E	F	F	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	13.11	13.12	11.57	13.51	19.03	4.90
50th-Percentile Queue Length [ft]	327.70	327.96	289.20	337.84	475.83	122.44
95th-Percentile Queue Length [veh]	19.64	19.66	17.15	19.62	26.51	8.53
95th-Percentile Queue Length [ft]	490.96	491.62	428.64	490.59	662.63	213.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	84.47	84.74	67.43	80.54	67.84	8.20
Movement LOS	F	F	E	F	F	A
d_A, Approach Delay [s/veh]	84.48		70.70		29.04	
Approach LOS	F		E		C	
d_I, Intersection Delay [s/veh]	52.02					
Intersection LOS	D					
Intersection V/C	0.889					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.436	4.789	5.587
Bicycle LOS	F	E	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	4	668	41	235	529	13	4	70	3	300	11	605
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	668	41	235	529	13	4	70	3	300	11	605
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	167	10	59	132	3	1	18	1	75	3	151
Total Analysis Volume [veh/h]	4	668	41	235	529	13	4	70	3	300	11	605
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	19	0	12	20	0	0	19	0	0	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	39	39	8	46	46	4	4	23	23	23
g / C, Green / Cycle	0.01	0.43	0.43	0.09	0.52	0.52	0.05	0.05	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.00	0.15	0.15	0.08	0.16	0.16	0.02	0.02	0.19	0.21	0.22
s, saturation flow rate [veh/h]	1603	3204	1634	3113	1683	1669	1675	1510	1603	1438	1431
c, Capacity [veh/h]	9	1383	705	277	866	859	81	73	406	364	362
d1, Uniform Delay [s]	44.59	17.03	17.05	40.41	12.65	12.65	41.76	41.77	30.86	31.93	31.96
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.81	0.66	1.32	7.17	0.95	0.96	4.66	5.24	2.65	5.71	5.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.34	0.34	0.85	0.31	0.31	0.50	0.50	0.74	0.85	0.85
d, Delay for Lane Group [s/veh]	72.40	17.69	18.37	47.57	13.59	13.60	46.42	47.01	33.51	37.64	37.91
Lane Group LOS	E	B	B	D	B	B	D	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.16	3.23	3.45	2.80	3.22	3.20	0.97	0.89	6.12	6.77	6.79
50th-Percentile Queue Length [ft]	4.02	80.76	86.26	70.09	80.60	80.00	24.24	22.31	153.11	169.23	169.72
95th-Percentile Queue Length [veh]	0.29	5.81	6.21	5.05	5.80	5.76	1.75	1.61	10.18	11.04	11.06
95th-Percentile Queue Length [ft]	7.23	145.36	155.26	126.17	145.07	144.00	43.63	40.15	254.58	275.91	276.54

Movement, Approach, & Intersection Results

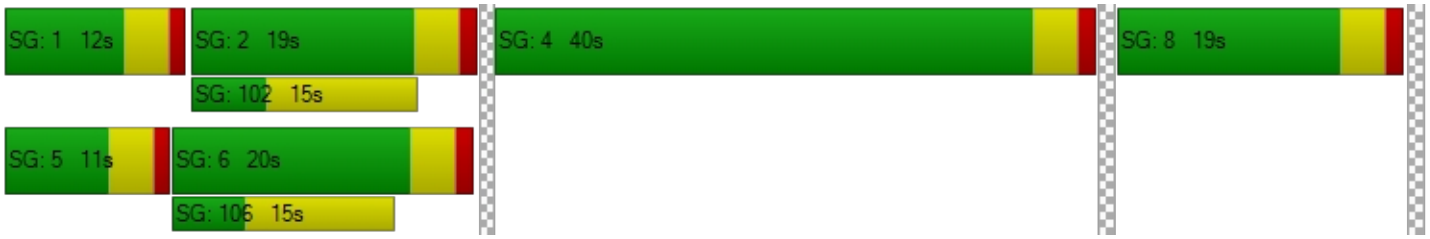
d_M, Delay for Movement [s/veh]	72.40	17.89	18.37	47.57	13.60	13.60	46.42	46.70	47.01	33.51	37.64	37.78
Movement LOS	E	B	B	D	B	B	D	D	D	C	D	D
d_A, Approach Delay [s/veh]	18.23			23.87			46.70			36.38		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	27.57											
Intersection LOS	C											
Intersection V/C	0.462											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.976	2.547
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	356	333	800
d_b, Bicycle Delay [s]	31.25	30.42	31.25	16.20
l_b,int, Bicycle LOS Score for Intersection	1.952	2.201	1.623	3.071
Bicycle LOS	A	B	A	C

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	786	149	128	1437	0	839	0	132	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	786	149	128	1437	0	839	0	132	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	197	37	32	359	0	210	0	33	0	0	0
Total Analysis Volume [veh/h]	0	786	149	128	1437	0	839	0	132	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	26	0	11	37	0	53	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	43	7	54	28	28	
g / C, Green / Cycle	0.48	0.08	0.60	0.31	0.31	
(v / s)_i Volume / Saturation Flow Rate	0.25	0.08	0.31	0.27	0.09	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1529	125	2748	970	446	
d1, Uniform Delay [s]	16.30	41.50	10.52	29.18	23.48	
k, delay calibration	0.50	0.11	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	1.24	44.46	0.72	2.46	0.37	
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	0.51	1.03	0.52	0.86	0.30	
d, Delay for Lane Group [s/veh]	17.54	85.96	11.24	31.64	23.85	
Lane Group LOS	B	F	B	C	C	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	5.56	4.27	5.15	8.56	2.13	
50th-Percentile Queue Length [ft]	139.04	106.66	128.73	214.09	53.25	
95th-Percentile Queue Length [veh]	9.43	7.68	8.87	13.36	3.83	
95th-Percentile Queue Length [ft]	235.73	191.98	221.77	334.07	95.84	

Movement, Approach, & Intersection Results

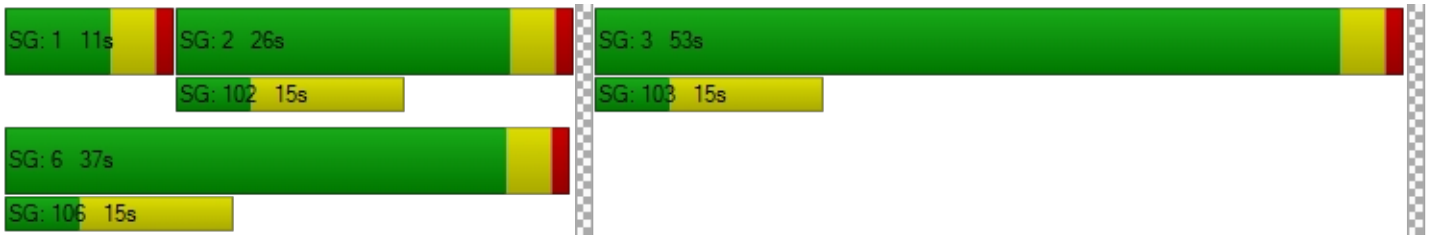
d_M, Delay for Movement [s/veh]	0.00	17.54	0.00	85.96	11.24	0.00	31.64	0.00	23.85	0.00	0.00	0.00
Movement LOS		B		F	B		C		C			
d_A, Approach Delay [s/veh]	17.54			17.35			30.58			0.00		
Approach LOS	B			B			C			A		
d_I, Intersection Delay [s/veh]	21.26											
Intersection LOS	C											
Intersection V/C	0.595											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.767	0.000	2.257	1.779
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	489	733	0	0
d_b, Bicycle Delay [s]	25.69	18.05	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.208	2.420	4.132	4.132
Bicycle LOS	B	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	46.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	101	1637	373	80	826	975	235	758	150	178	324	318
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]	101	1637	373	80	826	975	235	758	150	178	324	318
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	409	93	20	207	244	59	190	38	45	81	80
Total Analysis Volume [veh/h]	101	1637	373	80	826	975	235	758	150	178	324	318
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	39	0	9	38	0	0	22	0	0	20	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	30	30	5	29	29	29	23	23	23	23	16	16	16
g / C, Green / Cycle	0.07	0.33	0.33	0.06	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.06	0.27	0.27	0.05	0.18	0.34	0.34	0.15	0.22	0.18	0.18	0.11	0.19	0.13
s, saturation flow rate [veh/h]	1603	6113	1436	1603	4584	1431	1431	1603	1683	1532	1388	1603	1683	2532
c, Capacity [veh/h]	107	2017	474	89	1462	456	456	415	436	397	359	285	299	450
d1, Uniform Delay [s]	41.84	27.53	27.55	42.25	25.47	30.65	30.65	28.96	31.68	30.28	30.31	34.22	37.00	34.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.14	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.90	3.57	13.82	24.98	1.59	61.68	61.68	1.22	4.69	2.36	2.64	2.24	52.88	2.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	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	1.00

Lane Group Results

X, volume / capacity	0.95	0.81	0.81	0.90	0.57	1.07	1.07	0.57	0.85	0.71	0.71	0.62	1.08	0.71
d, Delay for Lane Group [s/veh]	70.74	31.10	41.38	67.22	27.05	92.34	92.34	30.18	36.37	32.65	32.95	36.46	89.88	36.84
Lane Group LOS	E	C	D	E	C	F	F	C	D	C	C	D	F	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	3.06	8.20	9.08	2.36	4.97	17.31	17.31	4.44	7.97	5.65	5.18	3.72	10.83	3.34
50th-Percentile Queue Length [ft]	76.55	204.99	227.04	59.08	124.3	432.6	432.6	111.0	199.3	141.2	129.3	92.90	270.64	83.53
95th-Percentile Queue Length [veh]	5.51	12.90	14.02	4.25	8.63	25.16	25.16	7.90	12.60	9.55	8.91	6.69	16.85	6.01
95th-Percentile Queue Length [ft]	137.80	322.39	350.59	106.3	215.7	628.9	628.9	197.4	315.0	238.7	222.6	167.22	421.34	150.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.74	31.16	41.38	67.22	27.05	92.34	30.18	34.51	32.95	36.46	89.88	36.84
Movement LOS	E	C	D	E	C	F	C	C	C	D	F	D
d_A, Approach Delay [s/veh]	34.86			62.60			33.41			57.72		
Approach LOS	C			E			C			E		
d_I, Intersection Delay [s/veh]	46.49											
Intersection LOS	D											
Intersection V/C	0.816											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.286	0.000	0.000	2.877
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	778	756	400	356
d_b, Bicycle Delay [s]	16.81	17.42	28.80	30.42
l_b,int, Bicycle LOS Score for Intersection	2.256	2.336	2.188	2.913
Bicycle LOS	B	B	B	C

Sequence

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

Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	302	2	0	0	160	623	602	0	137	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	302	2	0	0	160	623	602	0	137	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	1	0	0	40	156	151	0	34	0	0	0
Total Analysis Volume [veh/h]	302	2	0	0	160	623	602	0	137	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	1.67	0.57	0.37	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	419.01	12.69	8.52	0.00	0.00	7.49	0.00	0.00
Movement LOS	F	F			F	B	A		A	A	A	A
95th-Percentile Queue Length [veh]	40.79	40.79	0.00	0.00	12.73	3.80	1.74	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	1019.86	1019.86	0.00	0.00	318.36	94.90	43.62	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			95.72			6.94			2.50		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1708.70											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 12: I-5 NB Ramps/Camfield Ave & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	153.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.985

Intersection Setup

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	2	0	0
Pocket Length [ft]	175.00	100.00	100.00	100.00	100.00	100.00	115.00	100.00	100.00	130.00	100.00	100.00
Speed [mph]	30.00			35.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Camfield Ave			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	292	12	54	26	313	405	266	1251	139	511	1010	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	292	12	54	26	313	405	266	1251	139	511	1010	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	3	14	7	78	101	67	313	35	128	253	2
Total Analysis Volume [veh/h]	292	12	54	26	313	405	266	1251	139	511	1010	9
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	22	0	16	37	0	12	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	21	21	12	23	23	18	29	29
g / C, Green / Cycle	0.14	0.14	0.23	0.23	0.13	0.26	0.26	0.20	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.20	0.28	0.17	0.42	0.42	0.16	0.30	0.30
s, saturation flow rate [veh/h]	1603	1551	1677	1431	1603	1683	1625	3113	1683	1678
c, Capacity [veh/h]	218	211	386	329	217	437	422	611	540	538
d1, Uniform Delay [s]	37.87	37.88	33.44	34.65	38.92	33.32	33.32	34.77	29.79	29.80
k, delay calibration	0.11	0.11	0.16	0.34	0.11	0.50	0.50	0.11	0.50	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
d2, Incremental Delay [s]	8.00	8.34	9.36	120.81	111.38	282.82	295.36	3.11	27.22	27.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.83	0.88	1.23	1.23	1.61	1.63	0.84	0.94	0.95
d, Delay for Lane Group [s/veh]	45.87	46.22	42.79	155.46	150.30	316.14	328.68	37.88	57.01	57.25
Lane Group LOS	D	D	D	F	F	F	F	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	4.32	4.21	7.86	17.94	11.23	43.14	43.13	5.31	13.89	13.89
50th-Percentile Queue Length [ft]	108.04	105.24	196.44	448.52	280.78	1078.61	1078.26	132.86	347.26	347.37
95th-Percentile Queue Length [veh]	7.73	7.57	12.45	27.65	18.16	67.02	67.30	9.10	20.00	20.01
95th-Percentile Queue Length [ft]	193.27	189.36	311.37	691.14	453.98	1675.51	1682.51	227.38	500.06	500.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.01	46.22	46.22	42.79	42.79	155.46	150.30	321.65	328.68	37.88	57.13	57.25
Movement LOS	D	D	D	D	D	F	F	F	F	D	E	E
d_A, Approach Delay [s/veh]	46.04			104.12			294.72			50.70		
Approach LOS	D			F			F			D		
d_I, Intersection Delay [s/veh]	153.82											
Intersection LOS	F											
Intersection V/C	0.985											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.333	3.285	0.000
Crosswalk LOS	F	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	400	733	644
d_b, Bicycle Delay [s]	31.25	28.80	18.05	20.67
l_b,int, Bicycle LOS Score for Intersection	2.150	2.787	2.926	2.822
Bicycle LOS	B	C	C	C

Sequence

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

Intersection Level Of Service Report
Intersection 17: I-5 NB Ramps/Commerce Casino & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	490.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.002

Intersection Setup

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
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	1	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	330.00	100.00	100.00	100.00	100.00	100.00	95.00	100.00	100.00	320.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	I-5 NB Ramp			Commerce Casino			Telegraph Rd			Telegraph Rd		
Base Volume Input [veh/h]	222	15	262	39	90	21	41	1306	75	746	823	63
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]	222	15	262	39	90	21	41	1306	75	746	823	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	4	66	10	23	5	10	327	19	187	206	16
Total Analysis Volume [veh/h]	222	15	262	39	90	21	41	1306	75	746	823	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	19	0	0	19	0	33	20	0	32	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
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	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	R	L	C	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	8	8	3	7	7	44	48	48
g / C, Green / Cycle	0.17	0.17	0.09	0.09	0.04	0.08	0.08	0.49	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.15	0.18	0.02	0.07	0.03	0.29	0.29	0.47	0.18	0.18
s, saturation flow rate [veh/h]	1608	1431	1603	1629	1603	3204	1637	1603	3204	1622
c, Capacity [veh/h]	268	238	142	144	59	249	127	784	1699	860
d1, Uniform Delay [s]	36.65	37.50	38.30	40.11	42.85	41.50	41.50	21.97	12.17	12.17
k, delay calibration	0.11	0.12	0.11	0.11	0.11	0.50	0.50	0.20	0.50	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
d2, Incremental Delay [s]	9.41	59.53	1.03	8.28	13.75	1210.07	1219.39	11.70	0.56	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	1.10	0.27	0.77	0.70	3.67	3.67	0.95	0.35	0.35
d, Delay for Lane Group [s/veh]	46.06	97.03	39.34	48.39	56.60	1251.57	1260.89	33.67	12.73	13.27
Lane Group LOS	D	F	D	D	E	F	F	C	B	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	5.69	9.08	0.84	2.70	1.12	44.62	45.91	16.31	3.32	3.49
50th-Percentile Queue Length [ft]	142.25	226.96	20.91	67.57	27.94	1115.58	1147.76	407.77	82.95	87.30
95th-Percentile Queue Length [veh]	9.60	14.63	1.51	4.86	2.01	68.44	70.26	22.93	5.97	6.29
95th-Percentile Queue Length [ft]	240.05	365.72	37.63	121.62	50.28	1711.12	1756.51	573.36	149.31	157.15

Movement, Approach, & Intersection Results

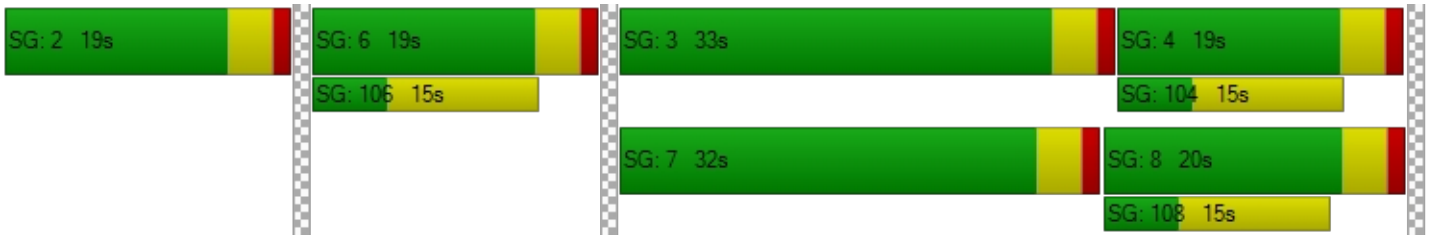
d_M, Delay for Movement [s/veh]	46.06	46.06	97.03	39.34	48.39	48.39	56.60	1254.37	1260.89	33.67	12.88	13.27
Movement LOS	D	D	F	D	D	D	E	F	F	C	B	B
d_A, Approach Delay [s/veh]	72.83			46.03			1220.18			22.40		
Approach LOS	E			D			F			C		
d_I, Intersection Delay [s/veh]	490.11											
Intersection LOS	F											
Intersection V/C	1.002											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	36.45	36.45	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.400	2.029	2.942	0.000
Crosswalk LOS	B	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	333	356	333
d_b, Bicycle Delay [s]	31.25	31.25	30.42	31.25
l_b,int, Bicycle LOS Score for Intersection	2.383	1.807	2.342	2.457
Bicycle LOS	B	A	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 20: I-5 NB Ramps & Telegraph Rd

Control Type:	Signalized	Delay (sec / veh):	83.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.986

Intersection Setup

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	1	0
Pocket Length [ft]	210.00	100.00	100.00	100.00	360.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	I-5 NB Ramp		Telegraph Rd		Telegraph Rd	
Base Volume Input [veh/h]	575	34	1105	309	548	688
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]	575	34	1105	309	548	688
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	144	9	276	77	137	172
Total Analysis Volume [veh/h]	575	34	1105	309	548	688
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
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner 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	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	5	0	5	5
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	19	0	39	0	32	71
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	5	0	5	0	0	5
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	35	35	28	67
g / C, Green / Cycle	0.17	0.17	0.39	0.39	0.31	0.74
(v / s)_i Volume / Saturation Flow Rate	0.19	0.19	0.42	0.45	0.34	0.21
s, saturation flow rate [veh/h]	1603	1581	1683	1562	1603	3204
c, Capacity [veh/h]	267	264	654	608	499	2385
d1, Uniform Delay [s]	37.50	37.50	27.50	27.50	31.00	3.74
k, delay calibration	0.14	0.14	0.50	0.50	0.47	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	78.38	78.92	58.83	90.70	68.88	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.15	1.15	1.08	1.16	1.10	0.29
d, Delay for Lane Group [s/veh]	115.88	116.42	86.33	118.20	99.88	4.05
Lane Group LOS	F	F	F	F	F	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	11.57	11.46	23.97	27.63	19.92	1.64
50th-Percentile Queue Length [ft]	289.26	286.38	599.21	690.78	497.99	40.91
95th-Percentile Queue Length [veh]	18.25	18.10	33.76	40.07	28.88	2.95
95th-Percentile Queue Length [ft]	456.29	452.59	843.88	1001.63	722.07	73.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	116.13	116.42	97.81	118.20	99.88	4.05
Movement LOS	F	F	F	F	F	A
d_A, Approach Delay [s/veh]	116.15		102.26		46.54	
Approach LOS	F		F		D	
d_I, Intersection Delay [s/veh]	83.72					
Intersection LOS	F					
Intersection V/C	0.986					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	45.00	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	5.137	5.299	5.152
Bicycle LOS	F	F	F

Sequence

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

Intersection Level Of Service Report
Intersection 22: Eastern Ave & I-5 SB Ramps/Stevens Pl

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
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	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	195.00	100.00	100.00	135.00	100.00	135.00	215.00	100.00	100.00	360.00	100.00	360.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Eastern Ave			Eastern Ave			Stevens Pl			I-5 SB Ramp		
Base Volume Input [veh/h]	3	860	43	363	944	22	21	35	20	120	16	366
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]	3	860	43	363	944	22	21	35	20	120	16	366
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	215	11	91	236	6	5	9	5	30	4	92
Total Analysis Volume [veh/h]	3	860	43	363	944	22	21	35	20	120	16	366
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	14	19	0	33	38	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	0	43	43	13	55	55	4	4	14	14	14
g / C, Green / Cycle	0.00	0.47	0.47	0.15	0.62	0.62	0.05	0.05	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.19	0.12	0.29	0.29	0.02	0.03	0.07	0.13	0.13
s, saturation flow rate [veh/h]	1603	3204	1642	3113	1683	1670	1640	1395	1603	1449	1431
c, Capacity [veh/h]	8	1518	778	455	1035	1027	79	67	247	224	221
d1, Uniform Delay [s]	44.65	15.32	15.33	37.14	9.37	9.38	41.79	41.85	34.79	37.11	37.11
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.49	0.77	1.50	3.26	1.52	1.54	4.94	6.48	1.47	9.30	9.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.39	0.39	0.80	0.47	0.47	0.51	0.54	0.49	0.86	0.86
d, Delay for Lane Group [s/veh]	73.14	16.09	16.83	40.40	10.90	10.92	46.72	48.33	36.26	46.40	46.51
Lane Group LOS	E	B	B	D	B	B	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.13	3.92	4.19	4.00	5.01	4.98	0.97	0.89	2.47	4.62	4.57
50th-Percentile Queue Length [ft]	3.19	97.96	104.78	100.03	125.33	124.60	24.15	22.36	61.74	115.58	114.30
95th-Percentile Queue Length [veh]	0.23	7.05	7.54	7.20	8.68	8.65	1.74	1.61	4.45	8.15	8.08
95th-Percentile Queue Length [ft]	5.74	176.33	188.61	180.05	217.12	216.14	43.47	40.24	111.13	203.74	201.97

Movement, Approach, & Intersection Results

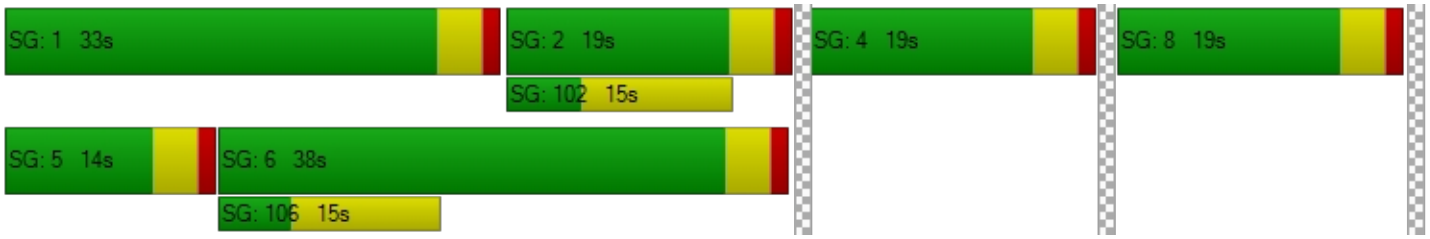
d_M, Delay for Movement [s/veh]	73.14	16.31	16.83	40.40	10.91	10.92	46.72	47.46	48.33	36.26	46.40	46.46
Movement LOS	E	B	B	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.53			18.96			47.48			44.02		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.42											
Intersection LOS	C											
Intersection V/C	0.462											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.980	2.485
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	333	756	333	333
d_b, Bicycle Delay [s]	31.25	17.42	31.25	31.25
l_b,int, Bicycle LOS Score for Intersection	2.058	2.656	1.622	2.388
Bicycle LOS	B	B	A	B

Sequence

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



Intersection Level Of Service Report
Intersection 25: I-5 SB Ramps & Washington Blvd

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
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	1	1	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	600.00	279.00	100.00	100.00	100.00	100.00	55.00	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	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Washington Blvd			Washington Blvd			I-5 SB Ramp					
Base Volume Input [veh/h]	0	1540	379	356	1250	0	304	0	33	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1540	379	356	1250	0	304	0	33	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	385	95	89	313	0	76	0	8	0	0	0
Total Analysis Volume [veh/h]	0	1540	379	356	1250	0	304	0	33	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	1	6	0	3	0	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	5	0	5	5	0	5	0	0	0	0	0
Maximum Green [s]	0	30	0	30	30	0	30	0	0	0	0	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Split [s]	0	43	0	28	71	0	19	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	5	0	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	10	0	0	0	0	0
Rest In Walk		No			No		No					
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No		No	No		No					
Maximum Recall		No		No	No		No					
Pedestrian Recall		No		No	No		No					
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	C	L	C	L	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]	45	22	71	11	11	
g / C, Green / Cycle	0.50	0.24	0.79	0.12	0.12	
(v / s)_i Volume / Saturation Flow Rate	0.48	0.22	0.27	0.10	0.02	
s, saturation flow rate [veh/h]	3204	1603	4584	3113	1431	
c, Capacity [veh/h]	1609	387	3614	382	176	
d1, Uniform Delay [s]	21.47	33.26	2.77	38.38	35.45	
k, delay calibration	0.50	0.21	0.50	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	14.30	15.26	0.26	3.81	0.51	
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	0.96	0.92	0.35	0.80	0.19	
d, Delay for Lane Group [s/veh]	35.77	48.53	3.03	42.19	35.96	
Lane Group LOS	D	D	A	D	D	
Critical Lane Group	Yes	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	17.35	9.00	1.46	3.41	0.67	
50th-Percentile Queue Length [ft]	433.73	224.99	36.50	85.31	16.72	
95th-Percentile Queue Length [veh]	24.18	13.92	2.63	6.14	1.20	
95th-Percentile Queue Length [ft]	604.50	347.99	65.70	153.56	30.09	

Movement, Approach, & Intersection Results

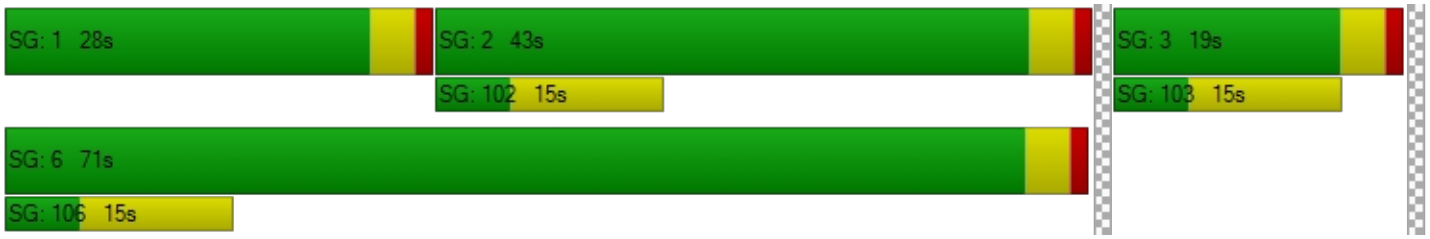
d_M, Delay for Movement [s/veh]	0.00	35.77	0.00	48.53	3.03	0.00	42.19	0.00	35.96	0.00	0.00	0.00
Movement LOS		D		D	A		D		D			
d_A, Approach Delay [s/veh]	35.77			13.12			41.58			0.00		
Approach LOS	D			B			D			A		
d_I, Intersection Delay [s/veh]	25.89											
Intersection LOS	C											
Intersection V/C	0.800											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	2.790	0.000	2.051	1.890
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	867	1489	0	0
d_b, Bicycle Delay [s]	14.45	2.94	45.00	45.00
l_b,int, Bicycle LOS Score for Intersection	2.830	2.443	4.132	4.132
Bicycle LOS	C	B	D	D

Sequence

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



Intersection Level Of Service Report
Intersection 26: Atlantic Blvd/I-710 NB Ramps & Bandini Blvd

Control Type:	Signalized	Delay (sec / veh):	175.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.930

Intersection Setup

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
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	1	0	0	1	0	1	0	0	0	0	0	2
Pocket Length [ft]	210.00	100.00	100.00	202.00	100.00	312.00	100.00	100.00	100.00	100.00	100.00	382.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			No			Yes		

Volumes

Name	At-71			At-71			Bandini Blvd			Bandini Blvd		
Base Volume Input [veh/h]	55	1594	270	66	1568	384	610	668	522	356	230	609
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]	55	1594	270	66	1568	384	610	668	522	356	230	609
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	399	68	17	392	96	153	167	131	89	58	152
Total Analysis Volume [veh/h]	55	1594	270	66	1568	384	610	668	522	356	230	609
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	34	0	9	34	0	0	28	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	R	L	C	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90	90	90
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	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	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	5	16	16	16	39	39	39	39	15	15	15
g / C, Green / Cycle	0.04	0.17	0.17	0.05	0.18	0.18	0.18	0.44	0.44	0.44	0.44	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.25	0.04	0.25	0.25	0.25	0.27	0.27	0.27	0.40	0.22	0.14	0.24
s, saturation flow rate [veh/h]	1603	6113	1489	1603	4584	1669	1431	1603	1649	1532	1302	1603	1683	2532
c, Capacity [veh/h]	68	1034	252	82	816	297	255	698	718	667	567	267	280	422
d1, Uniform Delay [s]	42.76	37.39	37.39	42.28	36.99	36.99	36.99	19.58	19.57	19.56	23.94	37.50	36.20	37.50
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.14	0.13	0.13	0.34	0.21	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.35	206.94	225.55	16.85	199.3	210.7	213.6	1.11	1.07	1.14	17.19	160.07	5.89	202.35
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	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	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	1.00

Lane Group Results

X, volume / capacity	0.81	1.45	1.46	0.81	1.43	1.43	1.43	0.61	0.61	0.61	0.92	1.33	0.82	1.44
d, Delay for Lane Group [s/veh]	63.10	244.33	262.94	59.13	236.3	247.7	250.6	20.69	20.64	20.70	41.13	197.57	42.08	239.85
Lane Group LOS	E	F	F	E	F	F	F	C	C	C	D	F	D	F
Critical Lane Group	Yes	No	No	No	No	No	Yes	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.58	20.43	21.22	1.82	20.91	23.77	20.59	6.78	6.96	6.46	12.48	17.63	5.24	16.41
50th-Percentile Queue Length [ft]	39.53	510.82	530.46	45.42	522.7	594.3	514.6	169.5	173.9	161.6	312.0	440.81	131.01	410.13
95th-Percentile Queue Length [veh]	2.85	32.39	33.54	3.27	33.00	36.99	32.55	11.05	11.28	10.63	18.28	27.72	8.99	26.65
95th-Percentile Queue Length [ft]	71.16	809.65	838.39	81.75	824.9	924.6	813.6	276.3	282.0	265.8	456.9	693.08	224.87	666.36

Movement, Approach, & Intersection Results

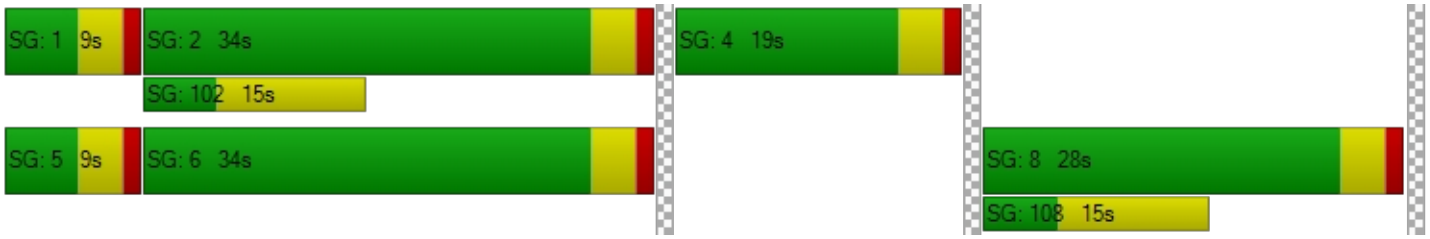
d_M, Delay for Movement [s/veh]	63.10	245.46	262.94	59.13	239.28	250.63	20.67	20.68	41.13	197.57	42.08	239.85
Movement LOS	E	F	F	E	F	F	C	C	D	F	D	F
d_A, Approach Delay [s/veh]	242.69			235.52			26.61			189.19		
Approach LOS	F			F			C			F		
d_I, Intersection Delay [s/veh]	175.27											
Intersection LOS	F											
Intersection V/C	0.930											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.45	0.00	0.00	36.45
l_p,int, Pedestrian LOS Score for Intersection	3.394	0.000	0.000	2.884
Crosswalk LOS	C	F	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	667	533	333
d_b, Bicycle Delay [s]	20.00	20.00	24.20	31.25
l_b,int, Bicycle LOS Score for Intersection	2.193	2.392	2.550	3.531
Bicycle LOS	B	B	B	D

Sequence

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



Intersection Level Of Service Report
Intersection 28: I-5 SB Ramps & Bandini Blvd

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.983

Intersection Setup

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
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	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Bandini Blvd			I-5 SB Ramp			Bandini Blvd					
Base Volume Input [veh/h]	272	10	0	0	49	87	1170	0	488	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	272	10	0	0	49	87	1170	0	488	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	3	0	0	12	22	293	0	122	0	0	0
Total Analysis Volume [veh/h]	272	10	0	0	49	87	1170	0	488	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.98	0.00	0.00	9.96	0.08	0.72	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10000.0	10000.0	0.00	0.00	5464.10	8.61	12.71	0.00	0.00	8.35	0.00	0.00
Movement LOS	F	F			F	A	B		A	A	A	A
95th-Percentile Queue Length [veh]	38.03	38.03	0.00	0.00	7.85	0.26	6.91	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft]	950.77	950.77	0.00	0.00	196.27	6.52	172.63	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10000.00			1974.19			8.97			2.78		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1494.87											
Intersection LOS	F											

Appendix G

Queue Length Report

Intersection: 18: Washington Blvd & Telegraph Rd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	T	L	T	TR	L	L	T	TR	L
Maximum Queue (ft)	142	154	420	344	204	274	260	204	264	229	256	124
Average Queue (ft)	123	147	298	197	125	209	193	155	206	179	185	69
95th Queue (ft)	184	173	518	401	243	308	292	233	280	268	271	174
Link Distance (ft)			644	644		645	645		828	828	828	
Upstream Blk Time (%)			2									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	130	130			300			180				165
Storage Blk Time (%)	6	46	1		0	1		1	15			8
Queuing Penalty (veh)	11	96	7		0	3		2	37			20

Intersection: 18: Washington Blvd & Telegraph Rd

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	179	139	266
Average Queue (ft)	106	95	201
95th Queue (ft)	187	155	291
Link Distance (ft)	416	416	416
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	1		
Queuing Penalty (veh)	1		

Intersection: 124: Washington Blvd & 10-Acre Parcel Dwy/Costco Dwy

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LT	R	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (ft)	36	58	147	84	123	214	152	156	99	213	113	204
Average Queue (ft)	14	41	99	59	104	118	112	115	88	146	62	142
95th Queue (ft)	42	70	156	99	136	227	178	184	113	260	150	225
Link Distance (ft)	462	462	524	524		416	416	416		281	281	281
Upstream Blk Time (%)										0		0
Queuing Penalty (veh)										0		0
Storage Bay Dist (ft)					100				75			
Storage Blk Time (%)					14	6			30	11		
Queuing Penalty (veh)					46	12			89	21		

Network Summary

Network wide Queuing Penalty: 344