

APPENDIX H-6: VISSIM OUTPUTS

Overview of Changes

Existing AM: Page 39 replaces 1832

Existing PM: Page 81 replaces 1874

CB AM: Page 123 replaces 1916

CB PM: Page 165 replaces 1958

Project AM: Page 182 replaces 1975

Project AM: Page 207 replaces 2000

Project PM: Page 249 replaces 2042

Alternative 3: Pages 254-337 replace 2047-2131

Alternative 2 AM: Page 375 replaces 2168

Alternative 2 PM: Page 317 replaces 2210

EXISTING AM

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 1 Hill Street/Alpine Street Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	11	110.0%	4.2	A
	Through	250	270	107.9%	7.5	A
	Right Turn	20	20	102.0%	4.6	A
	Subtotal	280	301	107.6%	7.2	A
SB	Left Turn	25	23	90.8%	10.2	B
	Through	700	722	103.1%	10.2	B
	Right Turn	10	9	93.0%	7.8	A
	Subtotal	735	754	102.5%	10.2	B
EB	Left Turn					
	Through	144	149	103.6%	20.8	C
	Right Turn					
	Subtotal	144	149	103.6%	20.8	C
WB	Left Turn	50	49	97.0%	31.5	C
	Through	761	744	97.8%	30.2	C
	Right Turn	40	40	99.0%	26.6	C
	Subtotal	851	832	97.8%	30.1	C
Total		2,010	2,036	101.3%	18.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 2		Broadway/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	38	36	95.0%	13.4	B
	Through	329	332	100.9%	7.5	A
	Right Turn	41	53	128.5%	6.9	A
	Subtotal	408	421	103.1%	7.9	A
SB	Left Turn	95	95	100.3%	19.4	B
	Through	1,224	1,268	103.6%	20.1	C
	Right Turn	198	196	98.9%	23.7	C
	Subtotal	1,517	1,559	102.8%	20.5	C
EB	Left Turn	19	20	106.8%	48.2	D
	Through	144	147	102.3%	32.2	C
	Right Turn	26	23	90.0%	17.0	B
	Subtotal	189	191	101.1%	32.1	C
WB	Left Turn	172	182	105.6%	37.8	D
	Through	615	599	97.4%	37.6	D
	Right Turn	78	78	99.4%	34.6	C
	Subtotal	865	858	99.2%	37.4	D
Total		2,979	3,029	101.7%	24.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	23	22	96.1%	50.8	D
	Right Turn					
	Subtotal	23	22	96.1%	50.8	D
SB	Left Turn					
	Through	20	17	82.5%	43.1	D
	Right Turn					
	Subtotal	20	17	82.5%	43.1	D
EB	Left Turn	20	21	105.5%	46.0	D
	Through	240	252	105.2%	23.3	C
	Right Turn	15	15	96.7%	26.4	C
	Subtotal	275	288	104.7%	25.5	C
WB	Left Turn	10	11	109.0%	18.5	B
	Through	925	916	99.1%	21.2	C
	Right Turn	80	77	96.4%	15.6	B
	Subtotal	1,015	1,004	98.9%	20.8	C
Total		1,333	1,331	99.8%	22.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	53	56	105.7%	20.7	C
	Through	295	319	108.3%	5.6	A
	Right Turn	12	13	105.0%	2.2	A
	Subtotal	360	388	107.8%	7.6	A
SB	Left Turn	138	138	99.8%	37.9	D
	Through	922	922	100.0%	43.2	D
	Right Turn	233	227	97.5%	206.2	F
	Subtotal	1,293	1,287	99.6%	74.1	E
EB	Left Turn	59	72	122.5%	26.6	C
	Through	120	119	98.8%	7.0	A
	Right Turn	61	62	101.0%	2.7	A
	Subtotal	240	252	105.2%	12.0	B
WB	Left Turn	48	46	96.7%	47.9	D
	Through	729	725	99.4%	30.8	C
	Right Turn	143	142	99.0%	7.4	A
	Subtotal	920	913	99.2%	28.3	C
Total		2,813	2,840	101.0%	41.9	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	80.0%	5.6	A
	Through	194	163	84.0%	16.7	B
	Right Turn	41	34	82.4%	12.4	B
	Subtotal	236	198	83.7%	16.1	B
SB	Left Turn	219	221	101.1%	13.7	B
	Through	479	477	99.6%	15.0	B
	Right Turn	529	530	100.1%	13.0	B
	Subtotal	1,227	1,228	100.1%	14.0	B
EB	Left Turn	67	66	98.5%	40.2	D
	Through	198	197	99.3%	20.9	C
	Right Turn	5	6	120.0%	6.4	A
	Subtotal	270	269	99.5%	25.6	C
WB	Left Turn					
	Through	390	383	98.1%	36.3	D
	Right Turn	177	176	99.4%	29.7	C
	Subtotal	567	558	98.5%	34.3	C
Total		2,300	2,253	97.9%	20.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	19	19	101.6%	13.7	B
	Through	573	554	96.6%	8.3	A
	Right Turn	164	160	97.6%	5.4	A
	Subtotal	756	733	96.9%	7.8	A
SB	Left Turn	60	56	93.3%	14.6	B
	Through	407	405	99.6%	8.6	A
	Right Turn	12	12	99.2%	6.2	A
	Subtotal	479	473	98.8%	9.2	A
EB	Left Turn	4	4	105.0%	12.4	B
	Through	4	4	95.0%	8.5	A
	Right Turn	7	9	122.9%	5.2	A
	Subtotal	15	17	110.7%	10.2	B
WB	Left Turn	97	96	98.6%	20.4	C
	Through	4	4	95.0%	4.6	A
	Right Turn	23	23	99.1%	4.9	A
	Subtotal	124	122	98.5%	17.4	B
Total		1,374	1,345	97.9%	9.2	A

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	175	113.8%	47.0	D
	Through	363	387	106.6%	24.0	C
	Right Turn	57	59	103.0%	5.3	A
	Subtotal	574	621	108.2%	28.8	C
SB	Left Turn	145	136	93.7%	44.6	D
	Through	366	342	93.5%	26.7	C
	Right Turn	29	31	105.2%	15.2	B
	Subtotal	540	509	94.2%	30.7	C
EB	Left Turn	56	60	106.4%	27.6	C
	Through	450	477	106.0%	33.3	C
	Right Turn	214	243	113.4%	24.0	C
	Subtotal	720	779	108.2%	30.0	C
WB	Left Turn	245	253	103.1%	25.4	C
	Through	1,226	1,153	94.0%	40.2	D
	Right Turn	334	316	94.7%	7.5	A
	Subtotal	1,805	1,721	95.4%	31.9	C
Total		3,639	3,630	99.8%	30.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	6	6	93.3%	35.7	D
	Through					
	Right Turn	8	5	66.3%	4.8	A
	Subtotal	14	11	77.9%	25.9	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	635	655	103.1%	2.0	A
	Right Turn	17	18	108.2%	1.8	A
	Subtotal	652	673	103.2%	2.0	A
WB	Left Turn	6	6	106.7%	32.5	C
	Through	1,795	1,696	94.5%	112.2	F
	Right Turn	31	27	86.1%	91.9	F
	Subtotal	1,832	1,729	94.4%	111.7	F
Total		2,498	2,413	96.6%	78.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 9		Mission/Cesar Chavez			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	207	200	96.7%	75.7	E
	Through	487	491	100.8%	22.4	C
	Right Turn	88	87	98.6%	2.7	A
	Subtotal	782	778	99.5%	35.7	D
SB	Left Turn	25	23	92.4%	129.3	F
	Through	993	930	93.7%	138.1	F
	Right Turn	717	686	95.7%	252.3	F
	Subtotal	1,735	1,639	94.5%	188.4	F
EB	Left Turn	269	294	109.3%	51.0	D
	Through	254	250	98.3%	55.8	E
	Right Turn	120	116	96.9%	29.3	C
	Subtotal	643	660	102.7%	48.7	D
WB	Left Turn	297	291	98.0%	162.5	F
	Through	908	878	96.6%	160.0	F
	Right Turn	8	7	90.0%	178.0	F
	Subtotal	1,213	1,176	96.9%	160.6	F
Total		4,373	4,253	97.3%	127.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 10 Alameda/Alhambra Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	12	110.9%	13.0	B
	Through	345	376	109.1%	7.8	A
	Right Turn					
	Subtotal	356	389	109.1%	8.0	A
SB	Left Turn					
	Through	1,028	1,027	99.9%	2.5	A
	Right Turn	3	4	126.7%	2.0	A
	Subtotal	1,031	1,031	100.0%	2.5	A
EB	Left Turn					
	Through					
	Right Turn	10	10	104.0%	5.8	A
	Subtotal	10	10	104.0%	5.8	A
WB	Left Turn	454	454	100.0%	22.7	C
	Through	15	15	101.3%	25.4	C
	Right Turn	15	12	78.7%	19.4	B
	Subtotal	484	481	99.4%	22.7	C
Total		1,881	1,911	101.6%	9.0	A

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 11		Hill/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	14	92.7%	12.5	B
	Through	250	271	108.5%	9.3	A
	Right Turn	15	16	108.0%	4.9	A
	Subtotal	280	301	107.6%	9.4	A
SB	Left Turn	35	37	105.1%	12.1	B
	Through	700	718	102.5%	8.7	A
	Right Turn	15	16	109.3%	13.3	B
	Subtotal	750	771	102.8%	8.9	A
EB	Left Turn	10	9	86.0%	29.7	C
	Through	72	67	93.1%	25.6	C
	Right Turn	10	10	102.0%	19.8	B
	Subtotal	92	86	93.3%	25.8	C
WB	Left Turn	41	39	94.9%	33.3	C
	Through	250	252	100.7%	29.7	C
	Right Turn	20	23	115.5%	10.9	B
	Subtotal	311	314	100.9%	28.7	C
Total		1,433	1,472	102.7%	14.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	56	57	101.4%	35.0	D
	Through	366	366	100.0%	5.3	A
	Right Turn	70	66	93.7%	10.9	B
	Subtotal	492	488	99.3%	9.3	A
SB	Left Turn	80	107	134.0%	23.8	C
	Through	1,202	1,231	102.4%	16.0	B
	Right Turn	140	140	100.1%	23.3	C
	Subtotal	1,422	1,478	104.0%	17.2	B
EB	Left Turn	5	6	120.0%	32.3	C
	Through	81	80	98.9%	39.0	D
	Right Turn	36	33	92.8%	27.0	C
	Subtotal	122	120	98.0%	35.7	D
WB	Left Turn	61	46	74.9%	58.3	E
	Through	115	94	81.8%	50.7	D
	Right Turn	37	41	111.4%	36.1	D
	Subtotal	213	181	85.0%	48.9	D
Total		2,249	2,267	100.8%	19.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	449	443	98.7%	3.1	A
	Right Turn	44	43	96.8%	2.7	A
	Subtotal	493	486	98.5%	3.0	A
SB	Left Turn	33	33	100.0%	8.8	A
	Through	1,306	1,312	100.4%	15.5	B
	Right Turn					
	Subtotal	1,339	1,345	100.4%	15.4	B
EB	Left Turn	193	198	102.4%	29.9	C
	Through	45	46	102.4%	21.7	C
	Right Turn	16	19	116.9%	20.2	C
	Subtotal	254	262	103.3%	27.8	C
WB	Left Turn	20	21	105.0%	38.7	D
	Through					
	Right Turn	6	6	96.7%	4.0	A
	Subtotal	26	27	103.1%	32.3	C
Total		2,112	2,119	100.4%	14.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	114	114	100.1%	29.3	C
	Through	313	315	100.5%	25.2	C
	Right Turn	90	95	105.1%	19.9	B
	Subtotal	517	523	101.2%	25.2	C
SB	Left Turn	126	128	101.4%	61.0	E
	Through	810	817	100.9%	47.7	D
	Right Turn	363	363	100.0%	34.0	C
	Subtotal	1,299	1,308	100.7%	45.3	D
EB	Left Turn	130	132	101.5%	39.6	D
	Through	724	744	102.7%	22.2	C
	Right Turn	90	89	99.0%	11.7	B
	Subtotal	945	965	102.1%	23.6	C
WB	Left Turn	126	120	95.0%	15.0	B
	Through	1,374	1,268	92.3%	11.9	B
	Right Turn	49	42	85.3%	5.7	A
	Subtotal	1,549	1,430	92.3%	12.0	B
Total		4,310	4,226	98.0%	26.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	3	3	93.3%	42.1	D
	Through	332	324	97.7%	113.1	F
	Right Turn	164	156	95.1%	98.5	F
	Subtotal	499	483	96.8%	107.3	F
EB	Left Turn					
	Through	663	689	103.9%	9.0	A
	Right Turn	277	294	106.1%	4.6	A
	Subtotal	940	983	104.6%	7.7	A
WB	Left Turn	189	209	110.7%	52.3	D
	Through	1,385	1,233	89.0%	51.1	D
	Right Turn	17	17	97.1%	17.4	B
	Subtotal	1,591	1,459	91.7%	50.8	D
Total		3,030	2,924	96.5%	46.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	138	135	97.5%	39.7	D
	Through	178	180	101.3%	28.9	C
	Right Turn	85	89	104.1%	17.2	B
	Subtotal	401	403	100.6%	29.6	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	62	66	106.5%	29.8	C
	Through	604	648	107.3%	2.9	A
	Right Turn					
	Subtotal	666	714	107.2%	5.3	A
WB	Left Turn					
	Through	1,438	1,296	90.1%	18.7	B
	Right Turn	14	16	116.4%	1.4	A
	Subtotal	1,452	1,312	90.3%	18.5	B
Total		2,519	2,429	96.4%	16.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	126	125	99.1%	74.6	E
	Through	399	396	99.2%	29.7	C
	Right Turn	119	127	106.6%	20.7	C
	Subtotal	644	648	100.6%	36.1	D
SB	Left Turn	91	97	106.9%	13.6	B
	Through	1,115	1,118	100.2%	26.1	C
	Right Turn	136	133	97.9%	28.7	C
	Subtotal	1,342	1,348	100.5%	25.5	C
EB	Left Turn	48	48	99.0%	12.2	B
	Through	521	574	110.2%	6.1	A
	Right Turn	120	124	103.2%	8.5	A
	Subtotal	689	746	108.2%	7.0	A
WB	Left Turn	114	107	93.9%	25.0	C
	Through	1,190	1,089	91.5%	53.7	D
	Right Turn	46	42	92.0%	34.8	C
	Subtotal	1,350	1,238	91.7%	50.7	D
Total		4,025	3,980	98.9%	31.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 18

Union Station Driveway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	56	55	98.6%	55.8	E
	Through					
	Right Turn	62	60	96.9%	16.9	B
	Subtotal	118	115	97.7%	36.0	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	658	722	109.7%	3.1	A
	Right Turn	73	77	105.2%	2.5	A
	Subtotal	731	799	109.2%	3.1	A
WB	Left Turn	81	70	86.8%	122.0	F
	Through	1,328	1,237	93.1%	157.6	F
	Right Turn					
	Subtotal	1,409	1,307	92.7%	155.6	F
Total		2,258	2,221	98.3%	92.7	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	508	503	99.1%	12.5	B
	Right Turn	113	114	100.6%	8.2	A
	Subtotal	621	617	99.4%	11.7	B
SB	Left Turn	56	61	109.6%	13.2	B
	Through	1,029	975	94.8%	12.7	B
	Right Turn	320	315	98.3%	20.4	C
	Subtotal	1,405	1,351	96.2%	14.5	B
EB	Left Turn	97	106	108.8%	27.4	C
	Through	54	51	93.9%	32.1	C
	Right Turn	19	17	87.4%	7.4	A
	Subtotal	170	173	101.6%	27.0	C
WB	Left Turn	107	108	100.7%	28.0	C
	Through	58	60	102.8%	25.3	C
	Right Turn	39	41	104.1%	6.2	A
	Subtotal	204	208	102.0%	23.0	C
Total		2,400	2,349	97.9%	15.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	419	442	105.5%	13.8	B
	Right Turn					
	Subtotal	419	442	105.5%	13.8	B
SB	Left Turn					
	Through	711	699	98.4%	17.1	B
	Right Turn					
	Subtotal	711	699	98.4%	17.1	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	355	334	94.1%	23.6	C
	Through					
	Right Turn	780	747	95.7%	11.2	B
	Subtotal	1,135	1,081	95.2%	15.0	B
Total		2,265	2,222	98.1%	15.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 21

Spring/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	800	687	85.9%	22.1	C
	Right Turn	12	10	85.8%	13.1	B
	Subtotal	812	697	85.8%	22.0	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	514	543	105.5%	27.8	C
	Through	1,123	1,070	95.3%	23.5	C
	Right Turn					
	Subtotal	1,637	1,612	98.5%	25.0	C
Total		2,449	2,310	94.3%	24.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	76	79	103.6%	5.7	A
	Through	326	332	101.7%	4.8	A
	Right Turn					
	Subtotal	402	410	102.1%	5.1	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	1,561	1,525	97.7%	21.8	C
	Right Turn	75	72	96.3%	18.6	B
	Subtotal	1,636	1,598	97.6%	21.7	C
Total		2,038	2,008	98.5%	18.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	86	89	103.1%	16.1	B
	Through	257	270	105.2%	4.5	A
	Right Turn					
	Subtotal	343	359	104.7%	7.3	A
SB	Left Turn					
	Through	337	334	99.1%	17.6	B
	Right Turn	37	36	97.8%	15.3	B
	Subtotal	374	370	98.9%	17.5	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	350	326	93.2%	37.4	D
	Through	1,513	1,481	97.9%	36.2	D
	Right Turn	69	64	92.5%	37.4	D
	Subtotal	1,932	1,871	96.8%	36.5	D
Total		2,649	2,600	98.1%	29.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 24 Alameda/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	138	139	100.6%	87.3	F
	Through	773	765	99.0%	31.1	C
	Right Turn	49	84	171.6%	29.3	C
	Subtotal	960	988	102.9%	39.3	D
SB	Left Turn	13	34	257.7%	45.2	D
	Through	832	808	97.1%	53.9	D
	Right Turn	67	72	107.3%	54.0	D
	Subtotal	912	913	100.1%	53.7	D
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	465	436	93.7%	112.2	F
	Through	1,727	1,652	95.7%	103.6	F
	Right Turn	222	208	93.8%	104.0	F
	Subtotal	2,414	2,296	95.1%	105.3	F
Total		4,286	4,198	97.9%	78.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	34	33	95.6%	40.7	D
	Through	173	168	96.8%	23.0	C
	Right Turn	98	95	97.0%	2.8	A
	Subtotal	305	295	96.8%	18.6	B
SB	Left Turn	441	417	94.5%	47.1	D
	Through	157	152	96.6%	18.7	B
	Right Turn	227	272	119.6%	27.8	C
	Subtotal	825	840	101.8%	35.7	D
EB	Left Turn	111	151	135.6%	46.1	D
	Through	66	62	94.2%	37.6	D
	Right Turn	68	78	114.4%	21.4	C
	Subtotal	245	291	118.6%	38.4	D
WB	Left Turn	106	107	100.9%	36.4	D
	Through	130	147	113.2%	38.9	D
	Right Turn	363	372	102.5%	12.3	B
	Subtotal	599	626	104.5%	22.9	C
Total		1,974	2,052	103.9%	29.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 26

Broadway/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	299	325	108.8%	9.8	A
	Right Turn	78	77	98.8%	3.4	A
	Subtotal	377	402	106.7%	8.4	A
SB	Left Turn	128	124	97.1%	10.7	B
	Through	938	906	96.6%	7.1	A
	Right Turn					
	Subtotal	1,066	1,031	96.7%	7.5	A
EB	Left Turn	120	121	101.1%	23.8	C
	Through	270	275	101.7%	21.3	C
	Right Turn	150	162	108.0%	10.0	A
	Subtotal	540	558	103.3%	18.5	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,983	1,991	100.4%	10.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	159	145	91.3%	1.7	A
	Through	1,155	1,227	106.2%	12.6	B
	Right Turn					
	Subtotal	1,314	1,372	104.4%	11.5	B
EB	Left Turn					
	Through	284	283	99.6%	16.6	B
	Right Turn	192	193	100.4%	12.0	B
	Subtotal	476	476	99.9%	14.8	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,790	1,848	103.2%	12.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	356	364	102.3%	6.8	A
	Right Turn	211	208	98.4%	16.8	B
	Subtotal	567	572	100.9%	10.4	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	46	45	98.7%	8.4	A
	Through	397	416	104.7%	17.1	B
	Right Turn					
	Subtotal	443	461	104.0%	16.3	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,010	1,033	102.3%	13.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	325	341	104.9%	15.3	B
	Right Turn	83	140	168.7%	17.6	B
	Subtotal	466	481	103.2%	16.0	B
SB	Left Turn					
	Through	687	660	96.0%	12.4	B
	Right Turn					
	Subtotal	687	660	96.0%	12.4	B
EB	Left Turn	229	236	103.0%	18.8	B
	Through	211	244	115.8%	32.6	C
	Right Turn	150	145	96.5%	31.8	C
	Subtotal	608	625	102.8%	27.4	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,761	1,766	100.3%	18.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	717	717	100.0%	96.1	F
	Right Turn	151	158	104.8%	19.1	B
	Subtotal	868	875	100.8%	81.4	F
SB	Left Turn	143	133	92.9%	40.3	D
	Through	1,154	1,114	96.5%	16.9	B
	Right Turn					
	Subtotal	1,297	1,247	96.1%	19.5	B
EB	Left Turn	54	88	163.5%	37.9	D
	Through	62	65	104.5%	28.1	C
	Right Turn	153	149	97.4%	11.0	B
	Subtotal	269	302	112.3%	21.9	C
WB	Left Turn	145	139	95.8%	17.1	B
	Through					
	Right Turn	189	187	98.7%	42.1	D
	Subtotal	334	326	97.5%	32.2	C
Total		2,768	2,749	99.3%	41.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 31

US 101 Ramps/Commercial

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	13	12	94.6%	30.5	C
	Through	37	34	91.4%	32.5	C
	Right Turn	7	7	97.1%	7.1	A
	Subtotal	57	53	92.8%	29.3	C
SB	Left Turn	197	209	106.2%	34.2	C
	Through	59	61	103.2%	33.8	C
	Right Turn	183	180	98.3%	5.4	A
	Subtotal	439	450	102.5%	23.2	C
EB	Left Turn	206	205	99.7%	25.8	C
	Through	75	80	107.1%	19.1	B
	Right Turn	25	26	104.8%	8.7	A
	Subtotal	306	312	101.9%	22.8	C
WB	Left Turn	10	9	88.0%	27.3	C
	Through	118	112	94.7%	28.6	C
	Right Turn	104	102	98.4%	17.3	B
	Subtotal	232	223	96.1%	23.4	C
Total		1,034	1,038	100.3%	23.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 32 Broadway/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	332	359	108.0%	7.6	A
	Right Turn					
	Subtotal	332	359	108.0%	7.6	A
SB	Left Turn	50	48	96.2%	6.7	A
	Through	988	965	97.7%	7.5	A
	Right Turn	50	59	118.6%	10.2	B
	Subtotal	1,088	1,073	98.6%	7.6	A
EB	Left Turn	20	21	104.0%	33.6	C
	Through	555	577	103.9%	20.7	C
	Right Turn	150	144	95.9%	17.9	B
	Subtotal	725	741	102.2%	20.5	C
WB	Left Turn	75	66	87.9%	26.9	C
	Through	938	940	100.2%	17.4	B
	Right Turn	25	23	93.2%	16.2	B
	Subtotal	1,038	1,029	99.1%	18.0	B
Total		3,183	3,201	100.6%	13.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 33

Spring/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	55	53	96.9%	24.1	C
	Through	1,100	1,172	106.6%	19.8	B
	Right Turn	192	196	101.9%	32.6	C
	Subtotal	1,347	1,421	105.5%	21.8	C
EB	Left Turn					
	Through	468	499	106.6%	18.2	B
	Right Turn	137	134	98.0%	21.6	C
	Subtotal	605	633	104.6%	18.9	B
WB	Left Turn	110	120	109.3%	11.0	B
	Through	846	861	101.8%	11.7	B
	Right Turn					
	Subtotal	956	982	102.7%	11.6	B
Total		2,908	3,036	104.4%	17.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	116	118	101.4%	22.4	C
	Through	423	434	102.6%	20.8	C
	Right Turn	169	172	101.6%	17.0	B
	Subtotal	708	723	102.1%	20.1	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	58	61	104.7%	12.4	B
	Through	465	489	105.1%	14.4	B
	Right Turn					
	Subtotal	523	550	105.1%	14.1	B
WB	Left Turn					
	Through	840	856	101.9%	11.4	B
	Right Turn	86	84	97.2%	12.2	B
	Subtotal	926	939	101.4%	11.5	B
Total		2,157	2,154	99.8%	20.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 35 Los Angeles/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	73	74	101.5%	21.7	C
	Through	322	325	101.0%	12.8	B
	Right Turn	49	49	99.8%	19.8	B
	Subtotal	444	448	100.9%	15.2	B
SB	Left Turn	160	153	95.7%	26.6	C
	Through	845	812	96.0%	17.3	B
	Right Turn	84	96	114.6%	25.3	C
	Subtotal	1,089	1,061	97.4%	19.4	B
EB	Left Turn	30	43	141.7%	72.1	E
	Through	370	389	105.0%	24.3	C
	Right Turn	234	225	96.2%	23.9	C
	Subtotal	634	656	103.5%	27.3	C
WB	Left Turn	106	102	96.6%	40.2	D
	Through	769	769	100.0%	51.9	D
	Right Turn	114	112	97.9%	45.1	D
	Subtotal	989	983	99.4%	50.0	D
Total		3,156	3,148	99.7%	30.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 36

San Pedro/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	74	78	105.0%	18.2	B
	Through					
	Right Turn	41	57	137.8%	11.4	B
	Subtotal	115	134	116.7%	15.5	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	320	332	103.6%	8.6	A
	Right Turn	259	256	98.9%	8.4	A
	Subtotal	579	588	101.5%	8.5	A
WB	Left Turn	144	162	112.2%	13.9	B
	Through	915	908	99.3%	12.9	B
	Right Turn					
	Subtotal	1,059	1,070	101.0%	13.0	B
Total		1,753	1,792	102.2%	11.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	233	234	100.4%	35.0	D
	Through	724	727	100.5%	43.6	D
	Right Turn					
	Subtotal	957	961	100.4%	41.5	D
SB	Left Turn	65	60	91.8%	47.3	D
	Through	910	875	96.2%	34.8	C
	Right Turn	477	460	96.5%	15.1	B
	Subtotal	1,452	1,395	96.1%	29.0	C
EB	Left Turn	77	84	108.8%	24.6	C
	Through	158	179	113.0%	23.9	C
	Right Turn	126	123	97.8%	40.4	D
	Subtotal	361	386	106.8%	29.2	C
WB	Left Turn	25	24	96.4%	65.2	E
	Through	349	383	109.7%	71.3	E
	Right Turn	67	70	104.2%	72.9	E
	Subtotal	441	477	108.1%	71.3	E
Total		3,211	3,219	100.2%	39.1	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	424	422	99.6%	16.4	B
	Right Turn					
	Subtotal	424	422	99.6%	16.4	B
SB	Left Turn	50	48	96.0%	19.9	B
	Through	985	944	95.8%	20.0	B
	Right Turn	150	145	96.7%	11.7	B
	Subtotal	1,185	1,137	95.9%	19.0	B
EB	Left Turn	10	13	134.0%	20.9	C
	Through	499	534	106.9%	11.0	B
	Right Turn	90	89	99.1%	7.5	A
	Subtotal	599	636	106.2%	10.8	B
WB	Left Turn	45	41	91.1%	9.5	A
	Through	765	783	102.4%	7.4	A
	Right Turn	10	10	96.0%	2.9	A
	Subtotal	820	834	101.7%	7.5	A
Total		3,028	3,029	100.0%	13.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	24	162.7%	26.9	C
	Through	95	96	100.8%	15.1	B
	Right Turn	20	18	89.0%	6.8	A
	Subtotal	130	138	106.2%	16.3	B
SB	Left Turn	15	13	88.0%	19.2	B
	Through	368	370	100.5%	16.8	B
	Right Turn	20	34	171.0%	28.9	C
	Subtotal	403	417	103.5%	17.8	B
EB	Left Turn	10	29	288.0%	19.3	B
	Through	524	539	102.8%	6.2	A
	Right Turn	15	14	96.0%	5.5	A
	Subtotal	549	582	106.0%	6.7	A
WB	Left Turn	22	22	99.1%	11.8	B
	Through	785	781	99.5%	10.3	B
	Right Turn	10	10	100.0%	5.8	A
	Subtotal	817	813	99.5%	10.3	B
Total		1,899	1,950	102.7%	11.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	150	146	97.0%	23.6	C
	Through					
	Right Turn	10	10	101.0%	5.6	A
	Subtotal	160	156	97.3%	22.3	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	459	488	106.3%	14.5	B
	Right Turn	100	102	102.1%	14.5	B
	Subtotal	559	590	105.6%	14.5	B
WB	Left Turn	25	23	91.2%	14.6	B
	Through	667	684	102.5%	7.4	A
	Right Turn					
	Subtotal	692	707	102.1%	7.7	A
Total		1,411	1,453	102.9%	12.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
AM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	2	2	85.0%	6.3	A
	Through	901	902	100.1%	33.7	C
	Right Turn	49	51	104.9%	9.9	A
	Subtotal	952	955	100.3%	32.5	C
SB	Left Turn	23	21	91.3%	34.8	C
	Through	858	826	96.2%	13.2	B
	Right Turn	180	175	97.2%	10.0	A
	Subtotal	1,061	1,022	96.3%	13.0	B
EB	Left Turn	30	31	102.3%	15.0	B
	Through	389	419	107.7%	10.8	B
	Right Turn	50	50	100.8%	15.2	B
	Subtotal	469	500	106.7%	11.6	B
WB	Left Turn					
	Through	510	527	103.4%	14.5	B
	Right Turn	26	27	104.6%	13.6	B
	Subtotal	536	555	103.5%	14.5	B
Total		3,018	3,031	100.4%	19.4	B

EXISTING PM

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 1 Hill Street/Alpine Street Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	30	32	105.7%	19.6	B
	Through	620	653	105.3%	17.3	B
	Right Turn	65	66	101.1%	16.5	B
	Subtotal	715	750	105.0%	17.4	B
SB	Left Turn	15	15	97.3%	13.3	B
	Through	382	406	106.3%	8.7	A
	Right Turn	25	26	105.6%	7.6	A
	Subtotal	422	447	106.0%	8.8	A
EB	Left Turn	45	48	106.2%	23.4	C
	Through	264	263	99.5%	18.2	B
	Right Turn	15	15	100.7%	13.0	B
	Subtotal	324	326	100.5%	18.8	B
WB	Left Turn	30	28	94.7%	37.2	D
	Through	320	317	99.2%	28.1	C
	Right Turn	80	81	100.8%	22.5	C
	Subtotal	430	426	99.1%	27.9	C
Total		1,891	1,950	103.1%	18.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 2		Broadway/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	56	51	91.3%	20.2	C
	Through	1,083	1,083	100.0%	21.4	C
	Right Turn	97	104	107.5%	22.0	C
	Subtotal	1,236	1,238	100.2%	21.4	C
SB	Left Turn	54	53	97.6%	25.7	C
	Through	615	649	105.5%	12.8	B
	Right Turn	47	46	98.3%	13.3	B
	Subtotal	716	748	104.4%	13.9	B
EB	Left Turn	76	75	99.2%	18.2	B
	Through	230	233	101.4%	9.2	A
	Right Turn	38	36	95.3%	4.5	A
	Subtotal	344	345	100.2%	10.7	B
WB	Left Turn	51	62	121.4%	23.5	C
	Through	327	333	101.9%	27.0	C
	Right Turn	244	251	103.0%	26.7	C
	Subtotal	622	646	103.9%	26.7	C
Total		2,918	2,977	102.0%	19.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	8	7	86.3%	41.1	D
	Through					
	Right Turn	99	74	74.8%	20.4	C
	Subtotal	107	81	75.7%	22.5	C
SB	Left Turn	17	15	88.8%	24.9	C
	Through	28	27	96.8%	44.7	D
	Right Turn	8	8	95.0%	12.3	B
	Subtotal	53	50	94.0%	35.9	D
EB	Left Turn	10	11	108.0%	29.6	C
	Through	366	377	103.1%	18.8	B
	Right Turn	15	15	98.0%	20.8	C
	Subtotal	391	403	103.0%	19.3	B
WB	Left Turn	7	7	95.7%	5.5	A
	Through	613	628	102.5%	12.1	B
	Right Turn	12	11	95.0%	6.6	A
	Subtotal	632	646	102.3%	12.0	B
Total		1,183	1,180	99.7%	16.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	171	174	101.7%	17.7	B
	Through	950	984	103.5%	13.1	B
	Right Turn	48	52	108.1%	18.2	B
	Subtotal	1,169	1,209	103.5%	14.2	B
SB	Left Turn	93	90	96.8%	35.0	D
	Through	384	392	102.0%	11.6	B
	Right Turn	55	66	120.5%	8.3	A
	Subtotal	532	548	103.0%	15.2	B
EB	Left Turn	100	106	106.0%	16.6	B
	Through	314	312	99.3%	20.5	C
	Right Turn	68	67	98.5%	7.7	A
	Subtotal	482	485	100.6%	17.9	B
WB	Left Turn	54	54	100.6%	29.0	C
	Through	406	406	100.0%	20.8	C
	Right Turn	352	350	99.5%	9.6	A
	Subtotal	812	811	99.8%	16.7	B
Total		2,995	3,053	101.9%	15.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	5	4	70.0%	11.1	B
	Through	639	553	86.5%	19.0	B
	Right Turn	34	29	84.4%	14.4	B
	Subtotal	678	585	86.2%	18.8	B
SB	Left Turn	183	180	98.3%	40.8	D
	Through	267	264	98.7%	22.4	C
	Right Turn	181	182	100.3%	16.2	B
	Subtotal	631	625	99.0%	25.8	C
EB	Left Turn	222	219	98.8%	72.4	E
	Through	232	234	101.0%	23.6	C
	Right Turn	1	1	120.0%	0.0	A
	Subtotal	455	455	100.0%	48.1	D
WB	Left Turn					
	Through	626	624	99.7%	34.3	C
	Right Turn	352	347	98.5%	41.5	D
	Subtotal	978	971	99.3%	36.9	D
Total		2,742	2,635	96.1%	32.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	30	26	88.0%	12.8	B
	Through	920	905	98.4%	11.7	B
	Right Turn	77	79	102.2%	6.7	A
	Subtotal	1,027	1,011	98.4%	11.3	B
SB	Left Turn	28	29	103.2%	16.0	B
	Through	405	398	98.2%	10.0	B
	Right Turn	5	5	96.0%	5.3	A
	Subtotal	438	432	98.5%	10.4	B
EB	Left Turn	11	12	108.2%	20.2	C
	Through	5	5	94.0%	16.2	B
	Right Turn	19	19	100.5%	10.0	A
	Subtotal	35	36	102.0%	14.4	B
WB	Left Turn	134	131	97.5%	21.4	C
	Through	6	5	90.0%	21.2	C
	Right Turn	62	62	99.7%	6.6	A
	Subtotal	202	198	98.0%	17.3	B
Total		1,702	1,676	98.5%	11.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	279	280	100.4%	52.5	D
	Through	677	692	102.2%	34.0	C
	Right Turn	145	153	105.7%	13.2	B
	Subtotal	1,101	1,125	102.2%	35.2	D
SB	Left Turn	238	223	93.7%	44.1	D
	Through	310	280	90.5%	29.5	C
	Right Turn	47	43	91.7%	13.1	B
	Subtotal	595	547	91.8%	34.2	C
EB	Left Turn	46	47	101.7%	50.3	D
	Through	922	944	102.4%	56.8	E
	Right Turn	257	282	109.6%	43.0	D
	Subtotal	1,225	1,273	103.9%	53.5	D
WB	Left Turn	137	153	111.8%	40.6	D
	Through	842	874	103.8%	40.6	D
	Right Turn	304	302	99.5%	5.6	A
	Subtotal	1,283	1,330	103.6%	32.8	C
Total		4,204	4,274	101.7%	40.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	3	3	110.0%	19.9	B
	Through					
	Right Turn	4	5	112.5%	2.6	A
	Subtotal	7	8	111.4%	19.1	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,303	1,320	101.3%	1.9	A
	Right Turn	2	2	115.0%	0.8	A
	Subtotal	1,305	1,323	101.3%	1.9	A
WB	Left Turn	14	0	0.0%	0.0	A
	Through	1,280	1,309	102.3%	45.3	D
	Right Turn	7	0	0.0%	0.0	A
	Subtotal	1,301	1,309	100.6%	45.3	D
Total		2,613	2,639	101.0%	22.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	288	275	95.5%	142.3	F
	Through	565	565	100.0%	33.0	C
	Right Turn	81	85	104.7%	3.1	A
	Subtotal	934	925	99.0%	63.6	E
SB	Left Turn	45	47	105.3%	47.5	D
	Through	463	454	98.1%	45.7	D
	Right Turn	358	393	109.8%	17.7	B
	Subtotal	866	895	103.3%	33.7	C
EB	Left Turn	399	428	107.2%	37.9	D
	Through	630	616	97.7%	47.8	D
	Right Turn	278	275	98.7%	39.0	D
	Subtotal	1,307	1,318	100.8%	42.7	D
WB	Left Turn	167	165	98.6%	44.9	D
	Through	655	662	101.1%	47.1	D
	Right Turn	26	26	99.2%	36.1	D
	Subtotal	848	853	100.5%	46.5	D
Total		3,955	3,990	100.9%	46.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 10 Alameda/Hambra Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,154	1,198	103.8%	11.6	B
	Right Turn					
	Subtotal	1,154	1,198	103.8%	11.6	B
SB	Left Turn					
	Through	501	508	101.3%	2.4	A
	Right Turn	5	6	110.0%	0.2	A
	Subtotal	506	513	101.4%	2.4	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	253	252	99.5%	42.3	D
	Through					
	Right Turn	15	14	91.3%	35.5	D
	Subtotal	268	266	99.1%	42.0	D
Total		1,928	1,976	102.5%	13.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	20	100.5%	19.2	B
	Through	620	641	103.3%	12.3	B
	Right Turn	55	60	109.5%	10.3	B
	Subtotal	695	721	103.7%	12.2	B
SB	Left Turn	25	27	109.6%	15.1	B
	Through	382	398	104.1%	10.0	A
	Right Turn	20	21	103.5%	9.8	A
	Subtotal	427	446	104.4%	10.5	B
EB	Left Turn	15	16	108.0%	20.2	C
	Through	206	206	99.9%	18.1	B
	Right Turn	30	32	105.0%	19.0	B
	Subtotal	251	254	101.0%	18.4	B
WB	Left Turn	25	23	92.8%	14.0	B
	Through	180	180	99.8%	17.2	B
	Right Turn	80	83	104.3%	5.0	A
	Subtotal	285	286	100.5%	13.6	B
Total		1,658	1,707	102.9%	12.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	100	98	97.6%	31.9	C
	Through	996	985	98.9%	23.5	C
	Right Turn	59	62	104.9%	27.9	C
	Subtotal	1,155	1,145	99.1%	24.5	C
SB	Left Turn	54	81	150.7%	53.4	D
	Through	605	619	102.3%	11.1	B
	Right Turn	45	46	101.3%	13.4	B
	Subtotal	704	746	106.0%	15.8	B
EB	Left Turn	113	116	103.0%	16.3	B
	Through	105	107	101.4%	16.9	B
	Right Turn	68	71	104.4%	11.1	B
	Subtotal	286	294	102.8%	15.1	B
WB	Left Turn	35	27	77.7%	36.3	D
	Through	140	113	80.4%	30.3	C
	Right Turn	127	105	82.6%	28.0	C
	Subtotal	302	245	81.0%	29.8	C
Total		2,447	2,429	99.3%	21.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	943	934	99.0%	5.4	A
	Right Turn	12	11	93.3%	2.7	A
	Subtotal	955	945	98.9%	5.4	A
SB	Left Turn	15	16	106.0%	30.8	C
	Through	757	771	101.9%	18.3	B
	Right Turn					
	Subtotal	772	787	102.0%	18.5	B
EB	Left Turn	915	875	95.6%	37.4	D
	Through	22	22	101.4%	28.9	C
	Right Turn	36	34	93.3%	11.3	B
	Subtotal	973	931	95.6%	36.4	D
WB	Left Turn	41	44	108.0%	45.7	D
	Through					
	Right Turn	71	72	100.8%	7.1	A
	Subtotal	112	116	103.5%	23.1	C
Total		2,812	2,779	98.8%	20.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	165	165	99.9%	28.6	C
	Through	806	817	101.3%	27.5	C
	Right Turn	121	125	102.9%	34.6	C
	Subtotal	1,092	1,106	101.3%	28.7	C
SB	Left Turn	103	107	104.2%	60.1	E
	Through	408	405	99.1%	23.3	C
	Right Turn	197	204	103.5%	9.4	A
	Subtotal	708	716	101.1%	25.3	C
EB	Left Turn	198	200	101.2%	64.6	E
	Through	991	1,005	101.4%	43.1	D
	Right Turn	58	57	97.9%	14.6	B
	Subtotal	1,247	1,262	101.2%	45.7	D
WB	Left Turn	103	104	100.9%	31.4	C
	Through	1,143	1,097	96.0%	13.5	B
	Right Turn	151	140	92.4%	7.7	A
	Subtotal	1,397	1,341	96.0%	14.1	B
Total		4,444	4,424	99.6%	28.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	29	30	103.4%	40.7	D
	Through	65	70	108.0%	39.3	D
	Right Turn	69	68	98.3%	30.6	C
	Subtotal	163	168	103.1%	36.5	D
EB	Left Turn					
	Through	1,051	1,073	102.1%	8.3	A
	Right Turn	164	179	109.1%	3.8	A
	Subtotal	1,215	1,252	103.0%	7.8	A
WB	Left Turn	135	165	122.4%	53.2	D
	Through	1,328	1,256	94.6%	47.7	D
	Right Turn	97	87	89.5%	17.6	B
	Subtotal	1,560	1,508	96.7%	46.5	D
Total		2,938	2,928	99.7%	29.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	402	360	89.5%	27.5	C
	Through	856	806	94.1%	34.1	C
	Right Turn	234	230	98.4%	22.2	C
	Subtotal	1,492	1,396	93.5%	30.7	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	95	103	107.9%	94.0	F
	Through	985	1,023	103.9%	27.1	C
	Right Turn					
	Subtotal	1,080	1,126	104.2%	33.2	C
WB	Left Turn					
	Through	1,181	1,123	95.1%	23.7	C
	Right Turn	22	22	100.5%	6.8	A
	Subtotal	1,203	1,145	95.2%	23.3	C
Total		3,775	3,666	97.1%	29.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	104	106	102.2%	65.4	E
	Through	727	733	100.8%	18.3	B
	Right Turn	108	125	115.6%	14.8	B
	Subtotal	939	964	102.7%	23.0	C
SB	Left Turn	92	98	106.4%	11.4	B
	Through	627	636	101.4%	22.0	C
	Right Turn	115	116	100.5%	23.9	C
	Subtotal	834	849	101.8%	21.0	C
EB	Left Turn	95	92	97.3%	36.2	D
	Through	924	965	104.4%	16.7	B
	Right Turn	200	206	103.0%	6.2	A
	Subtotal	1,219	1,263	103.6%	16.6	B
WB	Left Turn	122	119	97.8%	38.3	D
	Through	984	953	96.8%	57.2	E
	Right Turn	133	120	90.2%	46.8	D
	Subtotal	1,239	1,192	96.2%	54.5	D
Total		4,231	4,268	100.9%	29.2	C

Vissim Post-Processor
 Average Results from 10 Runs
 Volume and Delay by Movement

Union Station Master Plan
 Existing
 PM Peak Hour

Intersection 18

Union Station Driveway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	95	15	15.8%	141.3	F
	Through					
	Right Turn	171	90	52.6%	35.3	D
	Subtotal	266	105	39.5%	46.8	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,054	1,114	105.7%	4.6	A
	Right Turn	70	70	100.6%	4.2	A
	Subtotal	1,124	1,185	105.4%	4.6	A
WB	Left Turn	48	43	89.6%	92.8	F
	Through	1,120	1,115	99.6%	130.8	F
	Right Turn					
	Subtotal	1,168	1,158	99.2%	129.3	F
Total		2,558	2,448	95.7%	63.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 19 Alameda/Los Angeles Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	421	447	106.2%	18.9	B
	Right Turn	73	79	108.6%	9.2	A
	Subtotal	494	527	106.6%	17.4	B
SB	Left Turn	60	64	106.3%	32.1	C
	Through	780	724	92.8%	32.6	C
	Right Turn	169	174	102.8%	31.8	C
	Subtotal	1,009	962	95.3%	32.4	C
EB	Left Turn	429	422	98.4%	47.9	D
	Through	91	84	92.6%	49.5	D
	Right Turn	107	105	98.0%	24.7	C
	Subtotal	627	611	97.5%	43.9	D
WB	Left Turn	125	130	103.6%	30.2	C
	Through	60	59	99.0%	29.0	C
	Right Turn	89	95	106.6%	6.2	A
	Subtotal	274	284	103.6%	21.9	C
Total		2,404	2,383	99.1%	30.9	C

**Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement**

**Union Station Master Plan
Existing
PM Peak Hour**

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	951	972	102.2%	11.5	B
	Right Turn					
	Subtotal	951	972	102.2%	11.5	B
SB	Left Turn					
	Through	465	463	99.7%	8.1	A
	Right Turn					
	Subtotal	465	463	99.7%	8.1	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	199	193	96.7%	20.3	C
	Through					
	Right Turn	540	532	98.5%	11.0	B
	Subtotal	739	724	98.0%	13.4	B
Total		2,155	2,159	100.2%	11.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 21 Spring/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	379	337	89.0%	20.2	C
	Right Turn	26	27	101.9%	10.8	B
	Subtotal	405	364	89.9%	19.5	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	207	259	125.0%	14.5	B
	Through	713	699	98.1%	13.0	B
	Right Turn					
	Subtotal	920	958	104.1%	13.4	B
Total		1,325	1,322	99.8%	15.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 22 Main/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	260	253	97.3%	22.7	C
	Through	1,251	1,181	94.4%	25.2	C
	Right Turn					
	Subtotal	1,511	1,434	94.9%	24.8	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	660	707	107.1%	3.7	A
	Right Turn	77	75	97.5%	5.4	A
	Subtotal	737	782	106.1%	3.9	A
Total		2,248	2,216	98.6%	17.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	183	176	96.0%	8.2	A
	Through	1,049	1,026	97.8%	7.1	A
	Right Turn					
	Subtotal	1,232	1,202	97.6%	7.3	A
SB	Left Turn					
	Through	151	160	106.2%	7.2	A
	Right Turn	38	35	92.1%	8.8	A
	Subtotal	189	195	103.3%	7.4	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	101	100	98.9%	52.5	D
	Through	516	570	110.5%	53.5	D
	Right Turn	52	50	95.2%	50.0	D
	Subtotal	669	720	107.6%	53.1	D
Total		2,090	2,117	101.3%	23.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	18	24	133.9%	8.9	A
	Through	428	467	109.0%	4.7	A
	Right Turn	1,184	1,146	96.8%	6.4	A
	Subtotal	1,630	1,637	100.4%	6.0	A
SB	Left Turn	164	163	99.4%	45.4	D
	Through	579	586	101.1%	7.5	A
	Right Turn	30	33	109.0%	5.6	A
	Subtotal	773	781	101.1%	15.5	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	240	247	103.0%	39.4	D
	Through	621	662	106.6%	40.9	D
	Right Turn	225	225	100.1%	78.6	E
	Subtotal	1,086	1,134	104.4%	48.2	D
Total		3,489	3,552	101.8%	21.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	35	35	99.4%	36.0	D
	Through	334	328	98.1%	23.5	C
	Right Turn	77	74	95.6%	2.4	A
	Subtotal	446	436	97.8%	21.0	C
SB	Left Turn	347	331	95.4%	40.4	D
	Through	222	208	93.7%	19.1	B
	Right Turn	135	177	130.9%	20.6	C
	Subtotal	704	716	101.7%	29.5	C
EB	Left Turn	171	189	110.7%	45.4	D
	Through	63	48	76.2%	26.5	C
	Right Turn	66	59	89.4%	20.9	C
	Subtotal	300	296	98.8%	37.7	D
WB	Left Turn	198	201	101.7%	54.8	D
	Through	113	138	122.3%	48.0	D
	Right Turn	496	506	102.0%	32.0	C
	Subtotal	807	846	104.8%	40.9	D
Total		2,257	2,294	101.6%	33.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	821	840	102.3%	44.8	D
	Right Turn	221	219	99.0%	32.6	C
	Subtotal	1,042	1,059	101.6%	42.3	D
SB	Left Turn	89	85	96.0%	56.8	E
	Through	575	571	99.4%	8.3	A
	Right Turn					
	Subtotal	664	657	98.9%	15.2	B
EB	Left Turn	130	132	101.7%	35.1	D
	Through	404	400	98.9%	38.2	D
	Right Turn	28	33	117.5%	6.2	A
	Subtotal	562	565	100.5%	36.0	D
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,268	2,280	100.5%	32.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	98	90	91.5%	39.6	D
	Through	488	597	122.3%	15.6	B
	Right Turn					
	Subtotal	586	687	117.2%	18.4	B
EB	Left Turn					
	Through	635	621	97.7%	44.5	D
	Right Turn	79	77	97.6%	21.3	C
	Subtotal	714	698	97.7%	41.9	D
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,300	1,384	106.5%	30.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,420	1,350	95.1%	69.6	E
	Right Turn	262	246	93.9%	61.6	E
	Subtotal	1,682	1,596	94.9%	68.9	E
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	91	85	93.2%	107.9	F
	Through	642	650	101.3%	59.0	E
	Right Turn					
	Subtotal	733	735	100.3%	64.3	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,415	2,331	96.5%	66.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,153	1,124	97.5%	44.9	D
	Right Turn	199	361	181.6%	46.3	D
	Subtotal	1,525	1,485	97.4%	45.3	D
SB	Left Turn					
	Through	252	261	103.4%	8.2	A
	Right Turn					
	Subtotal	252	261	103.4%	8.2	A
EB	Left Turn	551	603	109.4%	71.8	E
	Through	254	277	109.0%	44.9	D
	Right Turn	20	17	85.0%	38.8	D
	Subtotal	904	896	99.2%	63.4	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,681	2,642	98.5%	47.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,121	1,120	99.9%	49.4	D
	Right Turn	122	128	105.0%	20.8	C
	Subtotal	1,243	1,249	100.4%	46.7	D
SB	Left Turn	127	120	94.5%	52.5	D
	Through	692	713	103.0%	8.3	A
	Right Turn					
	Subtotal	819	833	101.7%	15.0	B
EB	Left Turn	353	368	104.1%	83.3	F
	Through	44	45	103.0%	22.1	C
	Right Turn	30	30	99.7%	5.2	A
	Subtotal	427	443	103.7%	72.3	E
WB	Left Turn	90	82	91.4%	111.1	F
	Through					
	Right Turn	156	148	95.1%	300.6	F
	Subtotal	246	231	93.8%	240.5	F
Total		2,735	2,755	100.7%	57.1	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 31 US 101 Ramps/Commercial Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	35	35	99.7%	34.5	C
	Through	418	414	99.1%	33.1	C
	Right Turn	24	24	101.7%	22.9	C
	Subtotal	477	474	99.3%	32.7	C
SB	Left Turn	115	124	108.1%	41.7	D
	Through	22	22	100.5%	44.0	D
	Right Turn	165	163	99.0%	6.8	A
	Subtotal	302	310	102.5%	23.6	C
EB	Left Turn	272	270	99.3%	34.8	C
	Through	64	63	99.1%	21.9	C
	Right Turn	11	12	109.1%	6.0	A
	Subtotal	347	345	99.5%	31.8	C
WB	Left Turn	1	1	100.0%	7.6	A
	Through	44	41	92.0%	48.3	D
	Right Turn	245	245	100.1%	23.1	C
	Subtotal	290	287	98.9%	26.9	C
Total		1,416	1,415	100.0%	29.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 32		Broadway/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	15	99.3%	33.2	C
	Through	760	791	104.1%	18.1	B
	Right Turn	70	67	95.0%	32.9	C
	Subtotal	845	872	103.2%	19.7	B
SB	Left Turn	41	41	100.0%	17.8	B
	Through	537	528	98.3%	4.7	A
	Right Turn	25	37	147.2%	6.1	A
	Subtotal	603	606	100.5%	5.6	A
EB	Left Turn	50	49	98.4%	89.7	F
	Through	729	723	99.2%	80.8	F
	Right Turn	20	16	77.5%	55.4	E
	Subtotal	799	788	98.6%	81.5	F
WB	Left Turn	90	82	91.4%	36.9	D
	Through	727	748	102.8%	16.6	B
	Right Turn	232	226	97.6%	19.3	B
	Subtotal	1,049	1,056	100.7%	18.9	B
Total		3,296	3,322	100.8%	30.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 33 Spring/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	54	52	96.3%	82.2	F
	Through	414	525	126.9%	47.5	D
	Right Turn	99	99	99.7%	33.5	C
	Subtotal	567	676	119.2%	48.4	D
EB	Left Turn					
	Through	780	772	98.9%	53.1	D
	Right Turn	60	57	94.3%	40.5	D
	Subtotal	840	828	98.6%	52.2	D
WB	Left Turn	48	55	114.6%	6.6	A
	Through	950	969	102.0%	5.9	A
	Right Turn					
	Subtotal	998	1,024	102.6%	6.0	A
Total		2,405	2,528	105.1%	31.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	268	263	98.3%	129.6	F
	Through	1,399	1,338	95.6%	171.3	F
	Right Turn	132	132	99.6%	170.0	F
	Subtotal	1,799	1,733	96.3%	165.3	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	88	86	97.3%	51.7	D
	Through	746	734	98.4%	86.3	F
	Right Turn					
	Subtotal	834	819	98.2%	82.6	F
WB	Left Turn					
	Through	730	761	104.2%	18.5	B
	Right Turn	195	190	97.2%	30.6	C
	Subtotal	925	951	102.8%	20.8	C
Total		3,558	3,503	98.5%	104.0	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 35

Los Angeles/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	167	166	99.6%	82.2	F
	Through	1,131	1,083	95.8%	81.3	F
	Right Turn	70	67	95.4%	73.3	E
	Subtotal	1,368	1,316	96.2%	81.0	F
SB	Left Turn	85	80	93.9%	53.0	D
	Through	374	371	99.2%	18.7	B
	Right Turn	333	352	105.7%	44.8	D
	Subtotal	792	803	101.4%	33.9	C
EB	Left Turn	130	140	107.4%	184.7	F
	Through	635	615	96.9%	29.9	C
	Right Turn	113	109	96.1%	29.8	C
	Subtotal	878	863	98.3%	55.5	E
WB	Left Turn	69	65	94.2%	40.3	D
	Through	425	436	102.5%	45.9	D
	Right Turn	264	267	101.0%	64.2	E
	Subtotal	758	767	101.2%	51.7	D
Total		3,796	3,750	98.8%	59.0	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 36 San Pedro/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	162	162	99.8%	28.6	C
	Through					
	Right Turn	217	242	111.4%	46.9	D
	Subtotal	379	403	106.4%	40.4	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	760	735	96.7%	19.8	B
	Right Turn	30	26	87.3%	15.8	B
	Subtotal	790	761	96.3%	19.7	B
WB	Left Turn	38	52	136.6%	18.5	B
	Through	596	611	102.5%	13.4	B
	Right Turn					
	Subtotal	634	663	104.5%	13.8	B
Total		1,803	1,827	101.3%	21.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 37

Alameda/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	138	140	101.4%	23.2	C
	Through	906	894	98.6%	34.7	C
	Right Turn					
	Subtotal	1,044	1,033	99.0%	33.2	C
SB	Left Turn	46	43	93.7%	36.1	D
	Through	601	544	90.5%	27.0	C
	Right Turn	266	239	89.8%	6.0	A
	Subtotal	913	826	90.4%	21.4	C
EB	Left Turn	213	221	103.8%	38.7	D
	Through	536	535	99.8%	38.4	D
	Right Turn	228	214	93.9%	117.7	F
	Subtotal	977	970	99.3%	56.4	E
WB	Left Turn	29	27	91.7%	80.2	F
	Through	230	250	108.6%	56.2	E
	Right Turn	124	130	104.4%	70.3	E
	Subtotal	383	406	106.0%	62.5	E
Total		3,317	3,235	97.5%	41.2	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	35	32	92.0%	76.7	E
	Through	1,198	1,162	97.0%	96.8	F
	Right Turn	60	58	96.7%	95.6	F
	Subtotal	1,293	1,253	96.9%	96.4	F
SB	Left Turn	40	39	97.0%	39.4	D
	Through	496	488	98.3%	18.4	B
	Right Turn	20	18	89.0%	6.2	A
	Subtotal	556	544	97.9%	19.4	B
EB	Left Turn	60	52	86.2%	26.5	C
	Through	830	858	103.3%	16.4	B
	Right Turn	50	46	91.6%	7.8	A
	Subtotal	940	955	101.6%	16.6	B
WB	Left Turn	15	16	105.3%	22.3	C
	Through	480	495	103.1%	15.0	B
	Right Turn	110	107	97.3%	13.2	B
	Subtotal	605	618	102.1%	14.8	B
Total		3,394	3,370	99.3%	46.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	20	204.0%	18.5	B
	Through	294	300	101.9%	26.7	C
	Right Turn	43	44	102.3%	16.4	B
	Subtotal	347	364	104.9%	25.2	C
SB	Left Turn	15	15	98.7%	19.4	B
	Through	38	32	83.2%	23.0	C
	Right Turn	15	31	206.0%	30.5	C
	Subtotal	68	77	113.7%	25.3	C
EB	Left Turn	15	34	226.0%	6.0	A
	Through	900	910	101.1%	2.5	A
	Right Turn	15	15	100.7%	4.6	A
	Subtotal	930	959	103.1%	2.7	A
WB	Left Turn	30	29	96.0%	15.1	B
	Through	580	567	97.7%	9.7	A
	Right Turn	70	73	104.3%	9.6	A
	Subtotal	680	669	98.3%	9.9	A
Total		2,025	2,069	102.2%	10.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	150	145	96.5%	28.3	C
	Through					
	Right Turn	20	22	111.0%	8.7	A
	Subtotal	170	167	98.2%	25.4	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	943	966	102.4%	18.8	B
	Right Turn	15	18	116.7%	15.1	B
	Subtotal	958	983	102.6%	18.8	B
WB	Left Turn	16	15	95.0%	17.7	B
	Through	530	540	101.8%	7.0	A
	Right Turn					
	Subtotal	546	555	101.6%	7.3	A
Total		1,674	1,705	101.9%	15.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Existing
PM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	68	95.9%	36.5	D
	Through	584	577	98.8%	26.4	C
	Right Turn	119	119	100.0%	8.1	A
	Subtotal	774	764	98.7%	24.1	C
SB	Left Turn	34	32	94.7%	29.5	C
	Through	683	680	99.5%	23.8	C
	Right Turn	141	139	98.7%	9.0	A
	Subtotal	858	851	99.2%	21.5	C
EB	Left Turn	385	387	100.6%	24.9	C
	Through	471	493	104.6%	11.5	B
	Right Turn	107	105	98.1%	15.4	B
	Subtotal	963	985	102.3%	17.2	B
WB	Left Turn					
	Through	334	348	104.2%	15.1	B
	Right Turn	75	76	101.1%	15.7	B
	Subtotal	409	424	103.6%	15.2	B
Total		3,004	3,024	100.7%	19.9	B

AM FUTURE

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	13	116.4%	12.0	B
	Through	284	310	109.1%	5.9	A
	Right Turn	21	22	105.7%	4.4	A
	Subtotal	316	345	109.1%	6.1	A
SB	Left Turn	26	24	90.4%	14.0	B
	Through	743	760	102.3%	10.4	B
	Right Turn	10	9	92.0%	7.5	A
	Subtotal	779	793	101.8%	10.4	B
EB	Left Turn	1	1	120.0%	18.6	B
	Through	150	154	102.7%	21.8	C
	Right Turn	1	1	130.0%	3.5	A
	Subtotal	152	157	103.0%	22.0	C
WB	Left Turn	52	50	96.0%	30.9	C
	Through	785	747	95.1%	29.4	C
	Right Turn	41	41	99.5%	24.2	C
	Subtotal	878	837	95.4%	29.3	C
Total		2,125	2,132	100.3%	18.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	39	34	88.2%	11.3	B
	Through	351	331	94.2%	6.8	A
	Right Turn	42	48	114.8%	7.0	A
	Subtotal	432	413	95.6%	7.2	A
SB	Left Turn	98	99	100.8%	20.8	C
	Through	1,267	1,305	103.0%	19.6	B
	Right Turn	204	202	98.9%	22.3	C
	Subtotal	1,569	1,606	102.3%	20.0	B
EB	Left Turn	21	21	98.1%	53.2	D
	Through	149	152	101.7%	30.6	C
	Right Turn	27	26	96.7%	18.7	B
	Subtotal	197	198	100.6%	31.7	C
WB	Left Turn	177	182	102.8%	41.9	D
	Through	635	600	94.5%	37.3	D
	Right Turn	83	79	95.1%	34.7	C
	Subtotal	895	861	96.2%	38.1	D
Total		3,093	3,078	99.5%	24.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	24	21	86.3%	88.1	F
	Right Turn					
	Subtotal	24	21	86.3%	88.1	F
SB	Left Turn					
	Through	21	18	87.6%	40.8	D
	Right Turn					
	Subtotal	21	18	87.6%	40.8	D
EB	Left Turn	21	22	103.8%	47.3	D
	Through	248	251	101.4%	23.4	C
	Right Turn	15	16	109.3%	29.2	C
	Subtotal	284	290	102.0%	25.7	C
WB	Left Turn	10	10	102.0%	22.5	C
	Through	957	919	96.0%	22.8	C
	Right Turn	84	78	92.3%	13.3	B
	Subtotal	1,051	1,007	95.8%	22.2	C
Total		1,380	1,335	96.8%	24.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	58	99.8%	23.2	C
	Through	380	386	101.5%	6.3	A
	Right Turn	12	11	92.5%	1.5	A
	Subtotal	450	455	101.0%	8.7	A
SB	Left Turn	171	160	93.7%	54.8	D
	Through	1,069	1,022	95.6%	71.6	E
	Right Turn	240	217	90.6%	308.2	F
	Subtotal	1,480	1,399	94.5%	107.5	F
EB	Left Turn	61	70	115.2%	27.8	C
	Through	122	120	98.3%	7.8	A
	Right Turn	65	61	93.8%	3.5	A
	Subtotal	248	251	101.3%	12.0	B
WB	Left Turn	49	48	97.3%	47.0	D
	Through	753	734	97.5%	31.7	C
	Right Turn	164	158	96.3%	7.7	A
	Subtotal	966	940	97.3%	28.7	C
Total		3,144	3,045	96.8%	58.6	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	70.0%	10.9	B
	Through	200	161	80.4%	14.0	B
	Right Turn	42	32	76.2%	10.6	B
	Subtotal	243	193	79.6%	13.4	B
SB	Left Turn	227	226	99.7%	14.6	B
	Through	493	493	100.0%	18.2	B
	Right Turn	544	547	100.6%	16.0	B
	Subtotal	1,264	1,267	100.2%	16.6	B
EB	Left Turn	68	65	95.7%	40.5	D
	Through	232	219	94.5%	22.8	C
	Right Turn	5	6	114.0%	10.6	B
	Subtotal	305	290	95.1%	26.5	C
WB	Left Turn					
	Through	421	393	93.3%	38.3	D
	Right Turn	185	175	94.5%	33.1	C
	Subtotal	606	568	93.7%	36.8	D
Total		2,418	2,318	95.9%	22.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	17	84.0%	14.4	B
	Through	609	557	91.5%	9.4	A
	Right Turn	164	149	91.0%	6.1	A
	Subtotal	793	723	91.2%	8.8	A
SB	Left Turn	61	54	89.0%	14.1	B
	Through	450	435	96.6%	9.6	A
	Right Turn	12	10	85.8%	4.6	A
	Subtotal	523	499	95.5%	10.0	B
EB	Left Turn	4	4	95.0%	15.6	B
	Through	4	3	67.5%	9.4	A
	Right Turn	6	7	111.7%	3.6	A
	Subtotal	14	13	94.3%	15.4	B
WB	Left Turn	123	123	100.0%	22.0	C
	Through	4	4	92.5%	17.7	B
	Right Turn	27	27	100.4%	4.8	A
	Subtotal	154	154	99.9%	18.8	B
Total		1,484	1,390	93.6%	10.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 7 Vignes/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	217	225	103.5%	94.6	F
	Through	393	412	104.8%	27.2	C
	Right Turn	118	117	99.5%	6.2	A
	Subtotal	728	754	103.5%	44.7	D
SB	Left Turn	158	144	91.4%	46.8	D
	Through	418	387	92.5%	29.7	C
	Right Turn	33	33	98.5%	18.3	B
	Subtotal	609	564	92.5%	33.4	C
EB	Left Turn	57	59	102.6%	33.3	C
	Through	463	483	104.3%	30.5	C
	Right Turn	281	299	106.4%	16.4	B
	Subtotal	801	841	104.9%	25.7	C
WB	Left Turn	309	275	89.0%	24.6	C
	Through	1,264	1,082	85.6%	45.7	D
	Right Turn	339	284	83.8%	7.1	A
	Subtotal	1,912	1,641	85.8%	35.9	D
Total		4,050	3,799	93.8%	35.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	6	8	130.0%	38.4	D
	Through					
	Right Turn	8	7	88.8%	5.8	A
	Subtotal	14	15	106.4%	26.5	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	721	727	100.8%	1.6	A
	Right Turn	18	18	101.7%	7.7	A
	Subtotal	739	745	100.8%	1.8	A
WB	Left Turn	6	6	101.7%	66.5	E
	Through	1,902	1,615	84.9%	175.1	F
	Right Turn	32	25	76.9%	142.7	F
	Subtotal	1,940	1,645	84.8%	174.5	F
Total		2,693	2,405	89.3%	116.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	265	243	91.7%	177.5	F
	Through	501	498	99.4%	22.0	C
	Right Turn	90	90	100.0%	2.9	A
	Subtotal	856	831	97.1%	63.7	E
SB	Left Turn	26	22	82.7%	154.0	F
	Through	1,021	842	82.4%	159.0	F
	Right Turn	738	614	83.2%	363.7	F
	Subtotal	1,785	1,477	82.7%	249.8	F
EB	Left Turn	286	304	106.3%	61.6	E
	Through	265	262	98.9%	63.7	E
	Right Turn	178	169	94.7%	37.3	D
	Subtotal	729	735	100.8%	56.8	E
WB	Left Turn	305	277	90.9%	256.2	F
	Through	937	838	89.4%	271.9	F
	Right Turn	8	6	80.0%	255.8	F
	Subtotal	1,250	1,121	89.7%	267.8	F
Total		4,620	4,164	90.1%	177.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 10 Alameda/Hambra Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	8	74.5%	12.7	B
	Through	435	443	101.7%	7.8	A
	Right Turn					
	Subtotal	446	451	101.1%	8.0	A
SB	Left Turn					
	Through	1,180	1,120	94.9%	14.9	B
	Right Turn	3	3	106.7%	13.9	B
	Subtotal	1,183	1,123	94.9%	14.9	B
EB	Left Turn					
	Through					
	Right Turn	10	10	100.0%	9.2	A
	Subtotal	10	10	100.0%	9.2	A
WB	Left Turn	467	461	98.6%	54.1	D
	Through	16	16	98.1%	62.3	E
	Right Turn	15	13	84.0%	57.0	E
	Subtotal	498	489	98.2%	54.3	D
Total		2,137	2,073	97.0%	21.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	14	91.3%	10.2	B
	Through	276	305	110.4%	9.8	A
	Right Turn	22	22	100.0%	5.6	A
	Subtotal	313	340	108.7%	9.6	A
SB	Left Turn	42	45	106.2%	8.2	A
	Through	739	752	101.8%	9.6	A
	Right Turn	15	16	104.0%	14.1	B
	Subtotal	796	813	102.1%	9.7	A
EB	Left Turn	10	10	96.0%	21.3	C
	Through	76	72	95.0%	23.4	C
	Right Turn	10	11	109.0%	21.9	C
	Subtotal	96	93	96.6%	23.2	C
WB	Left Turn	46	43	93.9%	31.5	C
	Through	257	245	95.2%	29.2	C
	Right Turn	30	31	104.3%	10.5	B
	Subtotal	333	319	95.9%	27.8	C
Total		1,538	1,565	101.7%	14.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	63	88.6%	42.2	D
	Through	385	358	92.9%	5.0	A
	Right Turn	74	68	91.4%	13.9	B
	Subtotal	530	488	92.1%	12.0	B
SB	Left Turn	83	109	131.0%	27.8	C
	Through	1,244	1,268	101.9%	21.5	C
	Right Turn	144	138	96.0%	27.9	C
	Subtotal	1,471	1,515	103.0%	22.6	C
EB	Left Turn	9	10	111.1%	31.9	C
	Through	90	90	100.1%	34.1	C
	Right Turn	41	39	93.9%	21.4	C
	Subtotal	140	139	99.0%	31.0	C
WB	Left Turn	64	51	79.2%	55.7	E
	Through	118	93	78.9%	57.4	E
	Right Turn	38	39	102.4%	41.8	D
	Subtotal	220	183	83.0%	53.9	D
Total		2,361	2,324	98.4%	23.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	535	488	91.2%	2.9	A
	Right Turn	45	41	90.0%	2.9	A
	Subtotal	580	529	91.1%	2.9	A
SB	Left Turn	34	33	97.4%	13.7	B
	Through	1,466	1,396	95.2%	24.4	C
	Right Turn					
	Subtotal	1,500	1,429	95.2%	24.2	C
EB	Left Turn	204	208	102.0%	29.5	C
	Through	47	45	95.3%	20.7	C
	Right Turn	16	19	115.6%	28.1	C
	Subtotal	267	271	101.6%	28.0	C
WB	Left Turn	21	21	99.5%	42.3	D
	Through					
	Right Turn	8	8	100.0%	5.7	A
	Subtotal	29	29	99.7%	29.7	C
Total		2,376	2,257	95.0%	19.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 14 Broadway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	128	122	95.2%	33.9	C
	Through	337	304	90.3%	23.9	C
	Right Turn	123	117	95.3%	20.2	C
	Subtotal	588	543	92.4%	25.3	C
SB	Left Turn	136	140	103.2%	68.6	E
	Through	840	839	99.9%	57.8	E
	Right Turn	373	374	100.3%	43.2	D
	Subtotal	1,349	1,353	100.3%	55.1	E
EB	Left Turn	139	140	100.7%	38.6	D
	Through	767	790	103.0%	24.2	C
	Right Turn	112	109	97.1%	13.7	B
	Subtotal	1,018	1,039	102.0%	25.0	C
WB	Left Turn	139	129	92.8%	14.5	B
	Through	1,435	1,244	86.7%	12.8	B
	Right Turn	54	44	82.2%	5.6	A
	Subtotal	1,628	1,417	87.1%	12.7	B
Total		4,583	4,353	95.0%	30.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 15 Spring/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	3	3	96.7%	21.6	C
	Through	349	338	96.8%	108.4	F
	Right Turn	170	156	91.9%	104.7	F
	Subtotal	522	497	95.2%	107.4	F
EB	Left Turn					
	Through	714	736	103.1%	9.8	A
	Right Turn	312	326	104.4%	6.9	A
	Subtotal	1,026	1,062	103.5%	8.9	A
WB	Left Turn	233	234	100.4%	54.6	D
	Through	1,458	1,220	83.7%	51.5	D
	Right Turn	17	13	77.1%	16.8	B
	Subtotal	1,708	1,467	85.9%	51.7	D
Total		3,256	3,026	92.9%	45.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	146	135	92.7%	39.6	D
	Through	183	180	98.2%	28.9	C
	Right Turn	107	107	99.8%	19.1	B
	Subtotal	436	422	96.7%	30.4	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	70	76	108.7%	35.9	D
	Through	647	686	106.1%	3.5	A
	Right Turn					
	Subtotal	717	762	106.3%	7.2	A
WB	Left Turn					
	Through	1,546	1,302	84.2%	19.4	B
	Right Turn	14	15	109.3%	7.4	A
	Subtotal	1,560	1,317	84.4%	19.3	B
Total		2,713	2,501	92.2%	17.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 17 Alameda/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	134	124	92.2%	102.3	F
	Through	450	410	91.0%	29.2	C
	Right Turn	172	166	96.6%	22.0	C
	Subtotal	756	699	92.5%	41.3	D
SB	Left Turn	99	101	102.0%	16.4	B
	Through	1,214	1,152	94.9%	38.6	D
	Right Turn	190	178	93.7%	45.6	D
	Subtotal	1,503	1,431	95.2%	37.9	D
EB	Left Turn	78	74	95.4%	13.2	B
	Through	549	596	108.6%	8.7	A
	Right Turn	127	132	103.5%	10.9	B
	Subtotal	754	802	106.4%	9.6	A
WB	Left Turn	164	141	85.9%	34.0	C
	Through	1,236	1,046	84.6%	57.9	E
	Right Turn	52	44	84.0%	42.4	D
	Subtotal	1,452	1,231	84.8%	54.7	D
Total		4,465	4,163	93.2%	37.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 18 Union Station Driveway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	57	59	103.2%	17.1	B
	Through					
	Right Turn	64	52	81.4%	54.2	D
	Subtotal	121	111	91.7%	34.3	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	737	1,225	166.2%	169.4	F
	Right Turn	83	64	77.6%	129.3	F
	Subtotal	820	1,289	157.2%	167.6	F
WB	Left Turn	84	82	97.1%	3.6	A
	Through	1,430	782	54.7%	3.2	A
	Right Turn					
	Subtotal	1,514	863	57.0%	3.2	A
Total		2,455	2,264	92.2%	96.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	614	553	90.0%	13.0	B
	Right Turn	123	109	88.5%	10.7	B
	Subtotal	737	662	89.8%	12.7	B
SB	Left Turn	61	68	110.8%	28.1	C
	Through	1,115	1,032	92.5%	50.3	D
	Right Turn	329	315	95.8%	49.0	D
	Subtotal	1,505	1,414	94.0%	49.1	D
EB	Left Turn	100	109	108.7%	28.7	C
	Through	56	49	87.0%	30.3	C
	Right Turn	20	17	87.0%	13.1	B
	Subtotal	176	175	99.3%	28.2	C
WB	Left Turn	115	108	93.6%	43.6	D
	Through	60	58	95.8%	26.4	C
	Right Turn	42	42	100.7%	5.7	A
	Subtotal	217	207	95.6%	30.2	C
Total		2,635	2,458	93.3%	36.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 20 Broadway/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	466	492	105.6%	13.0	B
	Right Turn					
	Subtotal	466	492	105.6%	13.0	B
SB	Left Turn					
	Through	762	744	97.7%	16.8	B
	Right Turn					
	Subtotal	762	744	97.7%	16.8	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	365	294	80.5%	20.4	C
	Through					
	Right Turn	829	673	81.2%	9.4	A
	Subtotal	1,194	967	81.0%	12.7	B
Total		2,422	2,203	91.0%	14.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 21 Spring/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	877	720	82.1%	53.9	D
	Right Turn	35	31	87.7%	25.0	C
	Subtotal	912	751	82.3%	52.6	D
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	529	477	90.2%	71.0	E
	Through	1,159	934	80.6%	36.2	D
	Right Turn					
	Subtotal	1,688	1,411	83.6%	48.2	D
Total		2,600	2,162	83.2%	49.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	80	83	104.0%	22.2	C
	Through	355	355	100.0%	4.6	A
	Right Turn					
	Subtotal	435	438	100.7%	8.0	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	1,608	1,326	82.5%	43.2	D
	Right Turn	81	66	81.6%	31.8	C
	Subtotal	1,689	1,393	82.4%	42.6	D
Total		2,124	1,831	86.2%	33.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	88	87	99.2%	26.5	C
	Through	265	274	103.4%	6.6	A
	Right Turn					
	Subtotal	353	361	102.4%	12.0	B
SB	Left Turn					
	Through	347	333	96.0%	24.6	C
	Right Turn	38	34	88.9%	18.0	B
	Subtotal	385	367	95.3%	24.1	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	360	281	78.1%	58.6	E
	Through	1,563	1,281	82.0%	63.1	E
	Right Turn	71	55	77.6%	50.1	D
	Subtotal	1,994	1,618	81.1%	61.9	E
Total		2,732	2,346	85.9%	47.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 24 Alameda/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	143	132	92.1%	100.0	F
	Through	849	780	91.9%	32.9	C
	Right Turn	50	80	159.2%	30.2	C
	Subtotal	1,042	992	95.2%	42.1	D
SB	Left Turn	13	30	233.1%	62.1	E
	Through	939	823	87.7%	106.2	F
	Right Turn	69	70	102.0%	110.7	F
	Subtotal	1,021	924	90.5%	105.3	F
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	484	379	78.2%	158.5	F
	Through	1,782	1,413	79.3%	153.0	F
	Right Turn	274	219	80.0%	146.1	F
	Subtotal	2,540	2,011	79.2%	153.3	F
Total		4,603	3,926	85.3%	111.6	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 25 Vignes/Ramirez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	93	91	97.4%	41.6	D
	Through	195	185	95.0%	26.7	C
	Right Turn	101	101	100.1%	6.1	A
	Subtotal	389	377	96.9%	25.0	C
SB	Left Turn	523	539	103.1%	62.3	E
	Through	189	240	126.8%	33.5	C
	Right Turn	353	262	74.2%	35.0	C
	Subtotal	1,065	1,041	97.7%	49.4	D
EB	Left Turn	235	278	118.4%	65.9	E
	Through	68	6	8.8%	15.6	B
	Right Turn	70	14	20.4%	19.0	B
	Subtotal	373	299	80.1%	62.5	E
WB	Left Turn	109	110	101.1%	44.4	D
	Through	149	168	112.6%	78.9	E
	Right Turn	373	374	100.4%	30.1	C
	Subtotal	631	652	103.4%	44.9	D
Total		2,458	2,368	96.4%	46.2	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	331	357	107.9%	10.0	A
	Right Turn	83	85	102.9%	3.9	A
	Subtotal	414	443	106.9%	8.8	A
SB	Left Turn	144	130	90.2%	10.2	B
	Through	983	904	92.0%	7.0	A
	Right Turn					
	Subtotal	1,127	1,034	91.8%	7.4	A
EB	Left Turn	135	139	103.1%	29.3	C
	Through	279	284	101.8%	21.7	C
	Right Turn	163	177	108.5%	9.2	A
	Subtotal	577	600	104.0%	19.8	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,118	2,077	98.1%	11.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	171	154	90.1%	2.5	A
	Through	1,235	1,196	96.8%	20.4	C
	Right Turn					
	Subtotal	1,406	1,350	96.0%	18.4	B
EB	Left Turn					
	Through	309	306	98.9%	16.4	B
	Right Turn	197	193	98.0%	8.2	A
	Subtotal	506	499	98.5%	13.1	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,912	1,848	96.7%	17.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	388	395	101.8%	8.6	A
	Right Turn	217	214	98.7%	20.4	C
	Subtotal	605	609	100.7%	12.7	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	47	44	94.0%	7.5	A
	Through	433	448	103.5%	15.4	B
	Right Turn					
	Subtotal	480	492	102.5%	14.7	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,085	1,101	101.5%	13.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	334	342	102.5%	18.3	B
	Right Turn	85	142	167.4%	16.5	B
	Subtotal	479	485	101.2%	17.8	B
SB	Left Turn					
	Through	707	614	86.8%	12.6	B
	Right Turn					
	Subtotal	707	614	86.8%	12.6	B
EB	Left Turn	252	264	104.6%	18.3	B
	Through	222	250	112.8%	30.8	C
	Right Turn	157	149	94.8%	32.7	C
	Subtotal	650	663	102.0%	26.5	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,836	1,761	95.9%	19.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	777	700	90.1%	220.0	F
	Right Turn	158	144	91.0%	99.8	F
	Subtotal	935	844	90.3%	199.7	F
SB	Left Turn	200	168	84.1%	45.2	D
	Through	1,223	1,037	84.8%	17.7	B
	Right Turn					
	Subtotal	1,423	1,205	84.7%	21.3	C
EB	Left Turn	59	90	152.4%	41.4	D
	Through	66	69	105.2%	28.7	C
	Right Turn	157	147	93.8%	9.6	A
	Subtotal	282	307	108.7%	23.5	C
WB	Left Turn	149	144	96.7%	18.1	B
	Through					
	Right Turn	206	204	98.9%	38.9	D
	Subtotal	355	348	98.0%	30.4	C
Total		2,995	2,704	90.3%	79.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 31

US 101 Ramps/Commercial

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	13	12	93.8%	25.3	C
	Through	43	42	98.6%	29.8	C
	Right Turn	7	7	101.4%	9.5	A
	Subtotal	63	62	97.9%	26.3	C
SB	Left Turn	218	235	107.8%	34.3	C
	Through	63	64	101.0%	37.7	D
	Right Turn	200	198	99.1%	5.3	A
	Subtotal	481	497	103.2%	23.4	C
EB	Left Turn	271	243	89.5%	26.4	C
	Through	77	73	94.9%	18.0	B
	Right Turn	26	25	96.9%	8.3	A
	Subtotal	374	341	91.1%	23.4	C
WB	Left Turn	10	9	86.0%	26.6	C
	Through	122	116	95.2%	33.1	C
	Right Turn	176	168	95.6%	18.6	B
	Subtotal	308	293	95.1%	24.7	C
Total		1,226	1,192	97.2%	24.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 32		Broadway/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	100.0%	9.8	A
	Through	363	391	107.8%	8.5	A
	Right Turn					
	Subtotal	364	392	107.7%	8.5	A
SB	Left Turn	55	50	90.4%	6.2	A
	Through	1,028	967	94.1%	7.2	A
	Right Turn	63	69	109.2%	9.2	A
	Subtotal	1,146	1,086	94.7%	7.3	A
EB	Left Turn	25	24	96.8%	33.1	C
	Through	585	602	102.9%	19.4	B
	Right Turn	154	146	94.7%	15.7	B
	Subtotal	764	772	101.1%	19.2	B
WB	Left Turn	79	67	84.2%	27.8	C
	Through	973	917	94.2%	16.3	B
	Right Turn	26	25	97.7%	14.4	B
	Subtotal	1,078	1,008	93.5%	17.0	B
Total		3,352	3,258	97.2%	13.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 33 Spring/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	59	51	86.9%	51.9	D
	Through	1,172	1,141	97.3%	50.3	D
	Right Turn	201	183	90.8%	41.9	D
	Subtotal	1,432	1,374	96.0%	49.1	D
EB	Left Turn					
	Through	499	522	104.5%	18.3	B
	Right Turn	141	141	99.6%	19.7	B
	Subtotal	640	662	103.5%	18.6	B
WB	Left Turn	113	113	99.7%	9.5	A
	Through	877	855	97.5%	9.4	A
	Right Turn					
	Subtotal	990	967	97.7%	9.4	A
Total		3,062	3,004	98.1%	30.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	120	124	103.5%	19.6	B
	Through	457	475	103.9%	20.3	C
	Right Turn	174	177	102.0%	18.9	B
	Subtotal	751	777	103.4%	19.9	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	60	58	97.0%	14.1	B
	Through	498	512	102.8%	19.4	B
	Right Turn					
	Subtotal	558	570	102.2%	18.9	B
WB	Left Turn					
	Through	870	834	95.9%	12.6	B
	Right Turn	88	81	92.4%	13.4	B
	Subtotal	958	916	95.6%	12.6	B
Total		2,267	2,208	97.4%	24.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 35 Los Angeles/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	74	99.1%	31.7	C
	Through	331	333	100.6%	11.7	B
	Right Turn	60	59	98.0%	17.7	B
	Subtotal	466	466	100.0%	15.9	B
SB	Left Turn	175	157	89.5%	24.2	C
	Through	872	788	90.4%	19.0	B
	Right Turn	86	94	109.1%	24.2	C
	Subtotal	1,133	1,039	91.7%	20.4	C
EB	Left Turn	31	43	139.7%	57.4	E
	Through	400	417	104.2%	24.8	C
	Right Turn	241	225	93.2%	23.5	C
	Subtotal	672	685	101.9%	26.5	C
WB	Left Turn	109	98	89.8%	43.3	D
	Through	797	747	93.8%	56.1	E
	Right Turn	117	108	92.4%	49.1	D
	Subtotal	1,023	953	93.2%	54.0	D
Total		3,294	3,143	95.4%	31.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 36 San Pedro/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	76	79	103.3%	26.8	C
	Through					
	Right Turn	42	58	137.1%	23.0	C
	Subtotal	118	136	115.3%	24.8	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	369	375	101.6%	9.3	A
	Right Turn	266	256	96.2%	14.8	B
	Subtotal	635	631	99.3%	11.6	B
WB	Left Turn	149	156	104.8%	20.5	C
	Through	947	873	92.2%	14.9	B
	Right Turn					
	Subtotal	1,096	1,029	93.9%	15.7	B
Total		1,849	1,796	97.1%	15.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	240	218	90.7%	93.5	F
	Through	771	696	90.3%	177.8	F
	Right Turn					
	Subtotal	1,011	914	90.4%	157.2	F
SB	Left Turn	67	58	86.9%	50.1	D
	Through	970	845	87.1%	29.8	C
	Right Turn	492	428	87.0%	12.5	B
	Subtotal	1,529	1,331	87.1%	25.4	C
EB	Left Turn	95	103	108.1%	42.0	D
	Through	186	200	107.6%	22.9	C
	Right Turn	130	128	98.3%	39.1	D
	Subtotal	411	431	104.8%	31.9	C
WB	Left Turn	28	28	98.9%	77.0	E
	Through	364	391	107.5%	78.6	E
	Right Turn	69	73	105.8%	99.9	F
	Subtotal	461	492	106.7%	81.8	F
Total		3,412	3,168	92.8%	72.2	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 38 Los Angeles/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	446	442	99.2%	15.7	B
	Right Turn					
	Subtotal	446	442	99.2%	15.7	B
SB	Left Turn	51	46	90.6%	24.1	C
	Through	1,017	923	90.8%	20.6	C
	Right Turn	154	140	91.1%	9.6	A
	Subtotal	1,222	1,110	90.8%	19.4	B
EB	Left Turn	10	12	120.0%	13.2	B
	Through	513	534	104.1%	14.1	B
	Right Turn	93	96	103.7%	7.3	A
	Subtotal	616	643	104.3%	12.9	B
WB	Left Turn	46	36	77.6%	21.0	C
	Through	787	795	101.0%	12.6	B
	Right Turn	10	9	93.0%	4.0	A
	Subtotal	843	840	99.7%	12.8	B
Total		3,127	3,035	97.0%	15.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	24	157.3%	34.0	C
	Through	98	98	99.9%	20.5	C
	Right Turn	21	20	94.8%	6.3	A
	Subtotal	134	141	105.5%	20.9	C
SB	Left Turn	15	13	86.0%	28.3	C
	Through	379	362	95.6%	23.0	C
	Right Turn	21	36	172.9%	38.4	D
	Subtotal	415	411	99.1%	24.4	C
EB	Left Turn	10	28	281.0%	36.3	D
	Through	539	539	100.1%	7.1	A
	Right Turn	15	15	96.7%	4.2	A
	Subtotal	564	582	103.2%	8.5	A
WB	Left Turn	33	30	90.6%	26.3	C
	Through	807	793	98.2%	20.7	C
	Right Turn	10	10	97.0%	14.9	B
	Subtotal	850	832	97.9%	20.8	C
Total		1,963	1,967	100.2%	18.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	148	95.8%	24.2	C
	Through					
	Right Turn	12	14	116.7%	8.2	A
	Subtotal	166	162	97.3%	22.9	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	472	489	103.6%	18.5	B
	Right Turn	103	104	100.7%	12.6	B
	Subtotal	575	593	103.1%	17.5	B
WB	Left Turn	26	24	93.1%	13.6	B
	Through	696	702	100.9%	9.4	A
	Right Turn					
	Subtotal	722	727	100.6%	9.5	A
Total		1,463	1,481	101.2%	14.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
AM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	4	3	85.0%	50.4	D
	Through	953	881	92.4%	156.5	F
	Right Turn	50	49	98.6%	91.5	F
	Subtotal	1,007	933	92.7%	152.7	F
SB	Left Turn	24	22	90.0%	40.0	D
	Through	913	811	88.8%	16.0	B
	Right Turn	191	167	87.5%	14.8	B
	Subtotal	1,128	1,000	88.6%	16.2	B
EB	Left Turn	31	31	99.0%	30.4	C
	Through	402	423	105.3%	12.5	B
	Right Turn	51	50	98.6%	12.1	B
	Subtotal	484	504	104.2%	13.8	B
WB	Left Turn					
	Through	527	554	105.1%	27.3	C
	Right Turn	27	27	101.5%	45.2	D
	Subtotal	554	581	104.9%	27.6	C
Total		3,173	3,018	95.1%	57.8	E

PM FUTURE

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	32	32	101.3%	16.9	B
	Through	665	680	102.2%	16.7	B
	Right Turn	67	65	96.7%	14.9	B
	Subtotal	764	777	101.7%	16.6	B
SB	Left Turn	15	13	88.0%	13.4	B
	Through	435	455	104.6%	9.1	A
	Right Turn	26	27	101.9%	8.8	A
	Subtotal	476	495	103.9%	9.2	A
EB	Left Turn	47	50	106.4%	21.2	C
	Through	293	295	100.7%	19.5	B
	Right Turn	16	14	88.8%	10.8	B
	Subtotal	356	359	100.9%	19.4	B
WB	Left Turn	32	29	91.6%	33.2	C
	Through	340	323	95.1%	29.9	C
	Right Turn	82	78	94.5%	22.5	C
	Subtotal	454	430	94.8%	28.7	C
Total		2,050	2,061	100.5%	17.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	52	88.8%	18.8	B
	Through	1,134	1,045	92.2%	20.9	C
	Right Turn	100	103	102.7%	22.3	C
	Subtotal	1,292	1,200	92.8%	21.0	C
SB	Left Turn	55	54	98.2%	25.8	C
	Through	649	689	106.1%	13.9	B
	Right Turn	48	48	100.8%	15.0	B
	Subtotal	752	791	105.2%	14.7	B
EB	Left Turn	79	79	99.5%	18.7	B
	Through	254	255	100.6%	10.4	B
	Right Turn	42	41	97.4%	6.7	A
	Subtotal	375	375	100.0%	12.0	B
WB	Left Turn	52	58	112.1%	22.7	C
	Through	348	334	95.9%	24.7	C
	Right Turn	254	234	92.1%	24.8	C
	Subtotal	654	626	95.7%	24.5	C
Total		3,073	2,991	97.3%	19.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	7	5	72.9%	52.3	D
	Through					
	Right Turn	102	78	76.3%	19.0	B
	Subtotal	109	83	76.1%	21.7	C
SB	Left Turn	17	17	100.6%	39.6	D
	Through	29	27	94.5%	37.3	D
	Right Turn	8	7	91.3%	13.1	B
	Subtotal	54	52	95.9%	34.3	C
EB	Left Turn	10	10	95.0%	18.1	B
	Through	390	384	98.4%	19.9	B
	Right Turn	15	14	96.0%	22.5	C
	Subtotal	415	408	98.2%	20.1	C
WB	Left Turn	7	7	104.3%	17.2	B
	Through	646	609	94.2%	11.9	B
	Right Turn	13	10	80.0%	5.8	A
	Subtotal	666	626	94.1%	11.9	B
Total		1,244	1,169	93.9%	16.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	179	169	94.5%	17.4	B
	Through	1,112	1,057	95.0%	12.4	B
	Right Turn	49	46	94.7%	9.7	A
	Subtotal	1,340	1,273	95.0%	13.0	B
SB	Left Turn	116	120	103.3%	36.5	D
	Through	500	522	104.4%	13.4	B
	Right Turn	57	69	121.8%	8.9	A
	Subtotal	673	711	105.7%	16.9	B
EB	Left Turn	102	107	104.8%	14.7	B
	Through	335	324	96.7%	18.4	B
	Right Turn	72	66	91.9%	5.8	A
	Subtotal	509	497	97.6%	16.1	B
WB	Left Turn	55	48	86.9%	27.0	C
	Through	430	388	90.3%	20.3	C
	Right Turn	393	360	91.5%	11.7	B
	Subtotal	878	796	90.6%	16.8	B
Total		3,400	3,276	96.4%	15.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	5	3	68.0%	5.8	A
	Through	657	521	79.3%	21.1	C
	Right Turn	35	29	82.6%	13.2	B
	Subtotal	697	553	79.4%	20.6	C
SB	Left Turn	201	196	97.4%	35.9	D
	Through	275	273	99.4%	21.4	C
	Right Turn	186	192	103.0%	14.2	B
	Subtotal	662	661	99.8%	23.5	C
EB	Left Turn	228	224	98.3%	60.6	E
	Through	271	269	99.1%	19.3	B
	Right Turn	1	1	80.0%	0.1	A
	Subtotal	500	494	98.7%	38.4	D
WB	Left Turn					
	Through	687	601	87.4%	38.6	D
	Right Turn	370	319	86.1%	40.3	D
	Subtotal	1,057	919	87.0%	39.2	D
Total		2,916	2,627	90.1%	31.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	31	23	74.2%	19.3	B
	Through	980	827	84.3%	11.9	B
	Right Turn	57	48	84.9%	5.9	A
	Subtotal	1,068	898	84.1%	11.7	B
SB	Left Turn	27	25	94.1%	18.5	B
	Through	463	451	97.4%	10.4	B
	Right Turn	5	5	104.0%	5.2	A
	Subtotal	495	481	97.3%	10.7	B
EB	Left Turn	11	12	112.7%	23.3	C
	Through	5	6	112.0%	8.4	A
	Right Turn	20	21	105.5%	5.9	A
	Subtotal	36	39	108.6%	12.8	B
WB	Left Turn	263	250	95.2%	22.1	C
	Through	6	6	98.3%	11.5	B
	Right Turn	81	81	99.4%	6.7	A
	Subtotal	350	337	96.2%	18.2	B
Total		1,949	1,755	90.1%	12.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 7 Vignes/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	346	276	79.9%	204.5	F
	Through	719	633	88.1%	60.7	E
	Right Turn	208	182	87.5%	20.7	C
	Subtotal	1,273	1,091	85.7%	93.4	F
SB	Left Turn	296	271	91.7%	45.3	D
	Through	426	388	91.0%	35.9	D
	Right Turn	62	60	96.1%	25.1	C
	Subtotal	784	719	91.7%	38.7	D
EB	Left Turn	45	47	104.4%	54.3	D
	Through	948	903	95.2%	58.8	E
	Right Turn	325	321	98.9%	32.5	C
	Subtotal	1,318	1,271	96.4%	52.0	D
WB	Left Turn	198	181	91.4%	39.7	D
	Through	878	722	82.3%	83.5	F
	Right Turn	304	244	80.4%	7.7	A
	Subtotal	1,380	1,148	83.2%	60.2	E
Total		4,755	4,229	88.9%	61.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	3	2	80.0%	11.7	B
	Through					
	Right Turn	4	4	87.5%	3.1	A
	Subtotal	7	6	84.3%	14.8	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,450	1,355	93.5%	1.6	A
	Right Turn	2	2	95.0%	3.4	A
	Subtotal	1,452	1,357	93.5%	1.6	A
WB	Left Turn	14	0	0.0%	0.0	A
	Through	1,377	1,130	82.1%	317.3	F
	Right Turn	7	0	0.0%	0.0	A
	Subtotal	1,398	1,130	80.9%	317.3	F
Total		2,857	2,493	87.3%	140.6	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	348	219	63.0%	1140.5	F
	Through	581	433	74.5%	98.0	F
	Right Turn	83	62	75.2%	71.9	E
	Subtotal	1,012	715	70.6%	442.5	F
SB	Left Turn	46	48	103.7%	42.9	D
	Through	476	468	98.2%	54.6	D
	Right Turn	366	359	98.0%	276.9	F
	Subtotal	888	874	98.4%	149.3	F
EB	Left Turn	445	449	100.8%	46.3	D
	Through	663	602	90.8%	52.3	D
	Right Turn	346	311	89.8%	41.7	D
	Subtotal	1,454	1,361	93.6%	48.0	D
WB	Left Turn	172	161	93.3%	191.0	F
	Through	684	641	93.7%	232.6	F
	Right Turn	27	24	87.4%	209.9	F
	Subtotal	883	825	93.5%	223.6	F
Total		4,237	3,775	89.1%	156.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 10 Alameda/Hambra Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1,325	1,256	94.8%	11.9	B
	Through					
	Right Turn					
	Subtotal	1,325	1,256	94.8%	11.9	B
SB	Left Turn	622	630	101.3%	2.8	A
	Through	5	5	108.0%	0.5	A
	Right Turn	5	5	108.0%	0.5	A
	Subtotal	627	636	101.4%	2.7	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	260	260	99.9%	43.2	D
	Through	1	2	150.0%	16.9	B
	Right Turn	15	14	96.0%	39.0	D
	Subtotal	276	276	99.9%	43.0	D
Total		2,228	2,167	97.3%	13.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	21	21	100.0%	13.6	B
	Through	655	663	101.3%	13.1	B
	Right Turn	64	67	103.9%	11.3	B
	Subtotal	740	751	101.5%	12.9	B
SB	Left Turn	51	53	103.5%	18.2	B
	Through	411	421	102.5%	8.4	A
	Right Turn	21	19	90.5%	7.2	A
	Subtotal	483	493	102.1%	9.4	A
EB	Left Turn	15	16	108.0%	22.6	C
	Through	213	211	99.0%	17.5	B
	Right Turn	31	26	84.2%	14.7	B
	Subtotal	259	253	97.8%	17.5	B
WB	Left Turn	30	26	85.3%	18.0	B
	Through	185	172	92.8%	15.5	B
	Right Turn	94	87	92.9%	5.2	A
	Subtotal	309	285	92.1%	12.7	B
Total		1,791	1,782	99.5%	12.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	119	106	88.9%	37.6	D
	Through	1,040	943	90.7%	22.7	C
	Right Turn	65	60	92.5%	26.3	C
	Subtotal	1,224	1,109	90.6%	24.4	C
SB	Left Turn	61	89	146.2%	53.9	D
	Through	636	652	102.5%	10.8	B
	Right Turn	46	44	96.3%	20.3	C
	Subtotal	743	786	105.7%	16.4	B
EB	Left Turn	121	122	100.9%	19.0	B
	Through	124	121	97.9%	19.5	B
	Right Turn	83	85	102.4%	12.9	B
	Subtotal	328	329	100.2%	17.7	B
WB	Left Turn	39	30	75.6%	34.1	C
	Through	144	107	74.4%	33.4	C
	Right Turn	131	103	78.9%	29.6	C
	Subtotal	314	240	76.4%	31.7	C
Total		2,609	2,463	94.4%	21.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,101	1,019	92.6%	5.3	A
	Right Turn	13	13	100.0%	4.1	A
	Subtotal	1,114	1,032	92.7%	5.3	A
SB	Left Turn	16	16	101.9%	26.9	C
	Through	882	891	101.0%	21.8	C
	Right Turn					
	Subtotal	898	908	101.1%	21.9	C
EB	Left Turn	948	809	85.4%	37.0	D
	Through	23	17	73.9%	32.7	C
	Right Turn	37	31	84.6%	14.3	B
	Subtotal	1,008	858	85.1%	36.2	D
WB	Left Turn	42	43	102.1%	48.5	D
	Through					
	Right Turn	73	73	99.7%	7.5	A
	Subtotal	115	116	100.6%	21.8	C
Total		3,135	2,913	92.9%	20.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 14 Broadway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	192	182	94.7%	44.4	D
	Through	855	797	93.2%	52.9	D
	Right Turn	182	170	93.6%	85.5	F
	Subtotal	1,229	1,149	93.5%	56.3	E
SB	Left Turn	112	114	101.6%	80.4	F
	Through	443	449	101.4%	23.5	C
	Right Turn	203	201	99.1%	9.3	A
	Subtotal	758	764	100.8%	27.8	C
EB	Left Turn	210	191	90.9%	179.8	F
	Through	1,055	983	93.2%	158.7	F
	Right Turn	64	57	88.9%	88.9	F
	Subtotal	1,329	1,231	92.6%	158.6	F
WB	Left Turn	139	118	84.7%	48.9	D
	Through	1,203	1,001	83.2%	17.2	B
	Right Turn	159	124	78.1%	8.9	A
	Subtotal	1,501	1,243	82.8%	19.1	B
Total		4,817	4,387	91.1%	68.0	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 15 Spring/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	30	29	96.7%	44.1	D
	Through	99	101	101.7%	38.2	D
	Right Turn	72	71	98.3%	30.6	C
	Subtotal	201	201	99.8%	36.2	D
EB	Left Turn					
	Through	1,126	1,065	94.6%	16.6	B
	Right Turn	223	219	98.2%	4.8	A
	Subtotal	1,349	1,284	95.2%	14.6	B
WB	Left Turn	179	177	98.6%	53.7	D
	Through	1,429	1,146	80.2%	58.4	E
	Right Turn	100	80	79.5%	19.5	B
	Subtotal	1,708	1,402	82.1%	55.3	E
Total		3,258	2,886	88.6%	36.0	D

Vissim Post-Processor
 Average Results from 10 Runs
 Volume and Delay by Movement

Union Station Master Plan
 CB
 PM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	427	348	81.5%	55.7	E
	Through	880	733	83.3%	56.6	E
	Right Turn	278	243	87.5%	64.0	E
	Subtotal	1,585	1,325	83.6%	58.5	E
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	105	102	97.4%	91.5	F
	Through	1,051	1,008	95.9%	38.9	D
	Right Turn					
	Subtotal	1,156	1,111	96.1%	44.3	D
WB	Left Turn					
	Through	1,296	1,024	79.0%	34.1	C
	Right Turn	23	20	88.3%	19.1	B
	Subtotal	1,319	1,045	79.2%	33.7	C
Total		4,060	3,480	85.7%	47.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 17 Alameda/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	113	108	95.7%	136.8	F
	Through	822	788	95.8%	20.6	C
	Right Turn	161	167	103.9%	18.7	B
	Subtotal	1,096	1,063	97.0%	32.2	C
SB	Left Turn	100	105	104.8%	15.5	B
	Through	699	695	99.5%	29.9	C
	Right Turn	162	161	99.1%	40.7	D
	Subtotal	961	961	100.0%	30.3	C
EB	Left Turn	150	142	94.7%	52.5	D
	Through	969	925	95.5%	18.1	B
	Right Turn	210	194	92.3%	5.1	A
	Subtotal	1,329	1,261	94.9%	20.5	C
WB	Left Turn	173	125	72.1%	38.3	D
	Through	1,044	800	76.7%	80.1	F
	Right Turn	142	103	72.2%	58.1	E
	Subtotal	1,359	1,028	75.6%	73.3	E
Total		4,745	4,312	90.9%	37.9	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 18 Union Station Driveway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	97	91	93.3%	29.0	C
	Through					
	Right Turn	175	14	8.2%	129.9	F
	Subtotal	272	105	38.5%	44.2	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,143	958	83.8%	258.3	F
	Right Turn	87	39	44.8%	217.0	F
	Subtotal	1,230	997	81.1%	256.8	F
WB	Left Turn	49	84	170.6%	4.0	A
	Through	1,237	1,111	89.8%	5.7	A
	Right Turn					
	Subtotal	1,286	1,194	92.9%	5.6	A
Total		2,788	2,296	82.4%	112.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	558	548	98.2%	18.5	B
	Right Turn	88	86	98.2%	8.6	A
	Subtotal	646	634	98.2%	17.3	B
SB	Left Turn	72	75	103.8%	34.1	C
	Through	836	761	91.1%	33.4	C
	Right Turn	174	179	102.6%	30.0	C
	Subtotal	1,082	1,015	93.8%	32.9	C
EB	Left Turn	441	416	94.4%	49.0	D
	Through	94	87	92.6%	50.2	D
	Right Turn	110	102	92.8%	24.6	C
	Subtotal	645	605	93.8%	45.2	D
WB	Left Turn	156	153	97.8%	32.4	C
	Through	62	64	102.6%	27.2	C
	Right Turn	97	103	105.9%	6.0	A
	Subtotal	315	319	101.2%	23.1	C
Total		2,688	2,573	95.7%	30.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,038	1,010	97.3%	14.5	B
	Right Turn					
	Subtotal	1,038	1,010	97.3%	14.5	B
SB	Left Turn					
	Through	508	486	95.6%	13.4	B
	Right Turn					
	Subtotal	508	486	95.6%	13.4	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	205	188	91.6%	26.0	C
	Through					
	Right Turn	650	596	91.7%	16.3	B
	Subtotal	855	784	91.6%	18.7	B
Total		2,401	2,279	94.9%	15.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 21 Spring/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	451	364	80.6%	23.3	C
	Right Turn	103	88	85.8%	6.9	A
	Subtotal	554	452	81.6%	20.1	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	213	252	118.4%	47.1	D
	Through	752	700	93.1%	21.2	C
	Right Turn					
	Subtotal	965	952	98.7%	28.5	C
Total		1,519	1,404	92.5%	24.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	274	232	84.5%	29.1	C
	Through	1,324	1,103	83.3%	20.9	C
	Right Turn					
	Subtotal	1,598	1,335	83.5%	21.8	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	691	723	104.7%	16.6	B
	Right Turn	93	91	97.5%	11.1	B
	Subtotal	784	814	103.8%	15.7	B
Total		2,382	2,149	90.2%	19.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	190	172	90.7%	12.3	B
	Through	1,079	1,004	93.0%	7.2	A
	Right Turn					
	Subtotal	1,269	1,176	92.7%	7.9	A
SB	Left Turn					
	Through	155	165	106.5%	14.2	B
	Right Turn	39	39	100.0%	15.0	B
	Subtotal	194	204	105.2%	14.3	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	104	104	99.6%	59.9	E
	Through	555	605	108.9%	61.1	E
	Right Turn	53	51	95.7%	58.9	E
	Subtotal	712	759	106.6%	60.7	E
Total		2,175	2,139	98.3%	27.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	22	25	112.7%	9.2	A
	Through	508	513	101.0%	5.0	A
	Right Turn	1,217	1,114	91.5%	6.4	A
	Subtotal	1,747	1,652	94.5%	6.0	A
SB	Left Turn	169	153	90.3%	64.8	E
	Through	676	611	90.3%	16.1	B
	Right Turn	30	34	111.7%	9.6	A
	Subtotal	875	797	91.0%	25.3	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	253	247	97.5%	86.1	F
	Through	660	704	106.6%	92.5	F
	Right Turn	303	281	92.8%	192.7	F
	Subtotal	1,216	1,232	101.3%	113.3	F
Total		3,838	3,680	95.9%	46.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 25 Vignes/Ramirez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	102	103	100.8%	40.9	D
	Through	366	344	94.0%	36.7	D
	Right Turn	79	78	99.0%	4.9	A
	Subtotal	547	525	96.0%	32.6	C
SB	Left Turn	520	456	87.7%	46.3	D
	Through	272	246	90.3%	26.6	C
	Right Turn	284	220	77.5%	31.2	C
	Subtotal	1,076	922	85.7%	37.4	D
EB	Left Turn	297	286	96.4%	116.5	F
	Through					
	Right Turn					
	Subtotal	297	286	96.4%	116.5	F
WB	Left Turn	204	186	91.2%	154.7	F
	Through	156	155	99.2%	174.4	F
	Right Turn	507	433	85.3%	225.7	F
	Subtotal	867	773	89.2%	199.4	F
Total		2,787	2,506	89.9%	88.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	890	861	96.8%	89.9	F
	Right Turn	230	210	91.3%	68.3	E
	Subtotal	1,120	1,071	95.6%	85.6	F
SB	Left Turn	102	92	90.5%	83.3	F
	Through	611	579	94.8%	10.9	B
	Right Turn					
	Subtotal	713	672	94.2%	22.1	C
EB	Left Turn	148	151	101.7%	40.3	D
	Through	418	426	101.9%	34.6	C
	Right Turn	46	54	116.7%	8.0	A
	Subtotal	612	630	103.0%	34.0	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,445	2,373	97.1%	53.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	113	97	86.2%	29.1	C
	Through	551	615	111.6%	16.5	B
	Right Turn					
	Subtotal	664	712	107.3%	18.5	B
EB	Left Turn					
	Through	668	644	96.4%	26.2	C
	Right Turn	82	80	97.1%	21.7	C
	Subtotal	750	724	96.5%	25.7	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,414	1,436	101.6%	22.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,504	1,240	82.5%	45.3	D
	Right Turn	270	221	81.7%	48.1	D
	Subtotal	1,774	1,461	82.3%	46.0	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	94	95	101.1%	57.0	E
	Through	687	675	98.3%	59.7	E
	Right Turn					
	Subtotal	781	770	98.6%	59.5	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,555	2,231	87.3%	50.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,188	1,107	93.2%	50.1	D
	Right Turn	204	352	172.4%	50.9	D
	Subtotal	1,570	1,458	92.9%	50.3	D
SB	Left Turn					
	Through	259	268	103.4%	8.1	A
	Right Turn					
	Subtotal	259	268	103.4%	8.1	A
EB	Left Turn	586	594	101.3%	78.7	E
	Through	266	278	104.3%	50.3	D
	Right Turn	24	20	82.1%	48.1	D
	Subtotal	957	891	93.1%	69.1	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,786	2,617	93.9%	52.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,210	1,129	93.3%	48.2	D
	Right Turn	127	121	95.1%	22.1	C
	Subtotal	1,337	1,250	93.5%	45.6	D
SB	Left Turn	167	147	88.0%	98.4	F
	Through	762	709	93.0%	7.8	A
	Right Turn					
	Subtotal	929	856	92.1%	25.5	C
EB	Left Turn	366	365	99.7%	69.2	E
	Through	47	48	102.6%	20.8	C
	Right Turn	31	28	90.6%	4.5	A
	Subtotal	444	441	99.4%	59.3	E
WB	Left Turn	93	85	91.5%	169.5	F
	Through					
	Right Turn	171	159	92.7%	364.4	F
	Subtotal	264	244	92.3%	291.5	F
Total		2,974	2,790	93.8%	63.1	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 31 US 101 Ramps/Commercial Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	35	98.3%	32.8	C
	Through	435	433	99.6%	31.6	C
	Right Turn	25	26	102.0%	21.4	C
	Subtotal	496	494	99.6%	31.2	C
SB	Left Turn	130	141	108.2%	51.9	D
	Through	25	24	96.4%	46.9	D
	Right Turn	181	183	100.9%	6.8	A
	Subtotal	336	347	103.4%	26.8	C
EB	Left Turn	321	300	93.4%	39.5	D
	Through	66	62	93.6%	42.7	D
	Right Turn	11	10	92.7%	11.6	B
	Subtotal	398	372	93.4%	39.8	D
WB	Left Turn	1	2	150.0%	11.6	B
	Through	45	39	87.3%	58.4	E
	Right Turn	345	312	90.3%	27.0	C
	Subtotal	391	353	90.2%	30.4	C
Total		1,621	1,566	96.6%	32.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 32 Broadway/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	20	100.5%	83.2	F
	Through	808	805	99.7%	111.7	F
	Right Turn	72	65	90.0%	195.5	F
	Subtotal	900	890	98.9%	117.3	F
SB	Left Turn	45	42	93.6%	23.5	C
	Through	567	536	94.6%	5.1	A
	Right Turn	45	54	118.9%	8.1	A
	Subtotal	657	632	96.2%	6.7	A
EB	Left Turn	69	69	100.3%	165.7	F
	Through	765	753	98.5%	122.6	F
	Right Turn	21	18	83.8%	99.4	F
	Subtotal	855	840	98.3%	126.8	F
WB	Left Turn	97	80	82.3%	48.8	D
	Through	763	717	94.0%	22.6	C
	Right Turn	243	219	90.1%	39.3	D
	Subtotal	1,103	1,016	92.1%	28.1	C
Total		3,515	3,378	96.1%	69.0	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 33 Spring/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	58	55	94.0%	95.0	F
	Through	466	535	114.8%	51.3	D
	Right Turn	109	103	94.3%	53.1	D
	Subtotal	633	692	109.4%	55.8	E
EB	Left Turn					
	Through	820	791	96.5%	73.2	E
	Right Turn	62	60	97.3%	53.2	D
	Subtotal	882	851	96.5%	71.9	E
WB	Left Turn	49	52	105.5%	12.3	B
	Through	994	924	93.0%	14.1	B
	Right Turn					
	Subtotal	1,043	976	93.6%	14.0	B
Total		2,558	2,520	98.5%	44.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	278	226	81.2%	253.9	F
	Through	1,483	1,183	79.8%	308.9	F
	Right Turn	136	113	83.1%	315.6	F
	Subtotal	1,897	1,522	80.2%	301.1	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	90	86	95.8%	52.1	D
	Through	788	750	95.2%	96.1	F
	Right Turn					
	Subtotal	878	836	95.3%	91.7	F
WB	Left Turn					
	Through	765	749	97.9%	19.3	B
	Right Turn	201	188	93.4%	29.2	C
	Subtotal	966	936	96.9%	21.4	C
Total		3,741	3,294	88.1%	166.7	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 35 Los Angeles/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	172	164	95.1%	85.2	F
	Through	1,165	1,075	92.3%	91.7	F
	Right Turn	82	77	94.4%	79.9	E
	Subtotal	1,419	1,316	92.7%	90.1	F
SB	Left Turn	97	104	106.7%	72.8	E
	Through	388	387	99.6%	20.7	C
	Right Turn	342	342	100.1%	39.8	D
	Subtotal	827	832	100.6%	35.2	D
EB	Left Turn	134	135	100.7%	184.4	F
	Through	674	622	92.3%	29.6	C
	Right Turn	116	106	91.4%	27.9	C
	Subtotal	924	863	93.4%	54.5	D
WB	Left Turn	71	67	94.2%	38.6	D
	Through	452	433	95.8%	40.4	D
	Right Turn	271	258	95.1%	56.4	E
	Subtotal	794	757	95.4%	46.7	D
Total		3,964	3,769	95.1%	60.2	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 36 San Pedro/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	166	157	94.3%	38.6	D
	Through					
	Right Turn	223	244	109.5%	37.9	D
	Subtotal	389	401	103.0%	38.4	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	822	775	94.2%	19.8	B
	Right Turn	31	28	91.0%	15.2	B
	Subtotal	853	803	94.1%	19.7	B
WB	Left Turn	39	50	129.2%	14.8	B
	Through	628	606	96.4%	10.4	B
	Right Turn					
	Subtotal	667	656	98.4%	10.6	B
Total		1,909	1,860	97.4%	20.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	142	131	92.5%	24.7	C
	Through	968	882	91.1%	37.3	D
	Right Turn					
	Subtotal	1,110	1,013	91.3%	35.5	D
SB	Left Turn	47	37	77.9%	43.2	D
	Through	663	556	83.8%	28.1	C
	Right Turn	275	228	82.9%	6.6	A
	Subtotal	985	820	83.3%	23.0	C
EB	Left Turn	235	230	98.0%	37.3	D
	Through	576	572	99.3%	36.9	D
	Right Turn	234	212	90.5%	105.1	F
	Subtotal	1,045	1,014	97.0%	51.8	D
WB	Left Turn	32	33	102.5%	84.1	F
	Through	250	265	106.0%	59.2	E
	Right Turn	134	139	104.0%	69.9	E
	Subtotal	416	437	105.1%	64.6	E
Total		3,556	3,284	92.4%	41.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	32	88.9%	119.8	F
	Through	1,244	1,180	94.9%	143.8	F
	Right Turn	62	59	94.8%	143.6	F
	Subtotal	1,342	1,271	94.7%	143.3	F
SB	Left Turn	44	39	88.0%	36.1	D
	Through	510	500	98.0%	17.4	B
	Right Turn	21	19	91.9%	5.5	A
	Subtotal	575	558	97.0%	18.1	B
EB	Left Turn	62	32	51.3%	47.0	D
	Through	854	683	79.9%	100.3	F
	Right Turn	51	38	75.3%	57.1	E
	Subtotal	967	753	77.8%	95.6	F
WB	Left Turn	15	12	82.0%	38.2	D
	Through	504	509	101.0%	24.4	C
	Right Turn	113	111	97.8%	17.1	B
	Subtotal	632	632	100.0%	23.5	C
Total		3,516	3,214	91.4%	85.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 39 San Pedro/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	20	200.0%	30.4	C
	Through	302	299	99.0%	31.0	C
	Right Turn	44	46	104.1%	28.8	C
	Subtotal	356	365	102.5%	30.8	C
SB	Left Turn	15	14	92.0%	37.4	D
	Through	40	35	86.8%	20.8	C
	Right Turn	15	30	200.0%	53.7	D
	Subtotal	70	79	112.1%	35.0	C
EB	Left Turn	15	30	202.0%	23.8	C
	Through	926	757	81.7%	44.6	D
	Right Turn	19	15	76.3%	2.6	A
	Subtotal	960	802	83.5%	43.1	D
WB	Left Turn	31	31	98.4%	24.1	C
	Through	607	584	96.1%	12.9	B
	Right Turn	72	72	100.1%	10.1	B
	Subtotal	710	686	96.6%	13.1	B
Total		2,096	1,931	92.1%	29.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	150	97.5%	29.9	C
	Through					
	Right Turn	22	21	97.3%	21.3	C
	Subtotal	176	172	97.5%	28.8	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	970	820	84.5%	59.7	E
	Right Turn	15	11	74.0%	42.9	D
	Subtotal	985	831	84.4%	59.5	E
WB	Left Turn	16	16	100.0%	19.2	B
	Through	556	552	99.3%	7.2	A
	Right Turn					
	Subtotal	572	568	99.3%	7.5	A
Total		1,733	1,571	90.7%	37.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
CB
PM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	75	99.7%	38.5	D
	Through	637	617	96.8%	24.7	C
	Right Turn	122	119	97.8%	9.7	A
	Subtotal	834	811	97.2%	23.9	C
SB	Left Turn	35	34	95.7%	36.5	D
	Through	743	696	93.7%	21.7	C
	Right Turn	151	139	91.9%	10.5	B
	Subtotal	929	868	93.5%	20.6	C
EB	Left Turn	396	327	82.5%	25.9	C
	Through	486	425	87.4%	14.4	B
	Right Turn	110	89	81.1%	14.9	B
	Subtotal	992	841	84.7%	19.1	B
WB	Left Turn					
	Through	346	355	102.7%	16.6	B
	Right Turn	77	74	96.6%	13.4	B
	Subtotal	423	430	101.6%	16.0	B
Total		3,178	2,949	92.8%	20.4	C

AM PROJECT

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

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Intersection 1		Hill/Alpine			Signal		
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	11	11	97.3%	7.7	7.3	A
	Through	284	305	107.5%	6.0	1.2	A
	Right Turn	21	22	102.4%	4.2	3.8	A
	Subtotal	316	338	106.8%	6.0	1.1	A
SB	Left Turn	26	24	93.8%	13.9	6.6	B
	Through	743	775	104.3%	10.8	1.5	B
	Right Turn	10	10	95.0%	9.4	4.6	A
	Subtotal	779	809	103.9%	10.8	1.4	B
EB	Left Turn	1	1	80.0%	5.3	16.7	A
	Through	150	154	102.7%	22.8	3.4	C
	Right Turn	1	1	120.0%	5.0	8.6	A
	Subtotal	152	156	102.6%	22.8	3.5	C
WB	Left Turn	52	45	86.9%	31.6	6.0	C
	Through	785	684	87.1%	29.0	1.7	C
	Right Turn	41	37	90.2%	26.2	5.6	C
	Subtotal	878	766	87.3%	29.1	1.9	C
Total		2,125	2,069	97.3%	18.0	1.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	39	34	86.2%	9.6	A
	Through	351	294	83.7%	6.4	A
	Right Turn	42	47	111.2%	6.6	A
	Subtotal	432	374	86.6%	6.8	A
SB	Left Turn	98	93	94.7%	29.0	C
	Through	1,267	1,282	101.2%	31.8	C
	Right Turn	204	195	95.7%	28.9	C
	Subtotal	1,569	1,570	100.1%	31.3	C
EB	Left Turn	21	22	104.3%	49.0	D
	Through	149	150	100.4%	31.8	C
	Right Turn	27	25	93.0%	28.7	C
	Subtotal	197	197	99.8%	33.1	C
WB	Left Turn	177	158	89.2%	40.2	D
	Through	635	538	84.7%	33.8	C
	Right Turn	83	69	83.3%	24.9	C
	Subtotal	895	765	85.5%	34.7	C
Total		3,093	2,906	94.0%	28.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 3

Spring/Alpine

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	24	15	62.5%	55.3	9.2	E
	Right Turn						
	Subtotal	24	15	62.5%	55.3	9.2	E
SB	Left Turn						
	Through	21	19	90.5%	44.5	13.3	D
	Right Turn						
	Subtotal	21	19	90.5%	44.5	13.3	D
EB	Left Turn	21	20	97.1%	42.7	13.1	D
	Through	248	240	96.7%	24.5	2.7	C
	Right Turn	15	13	84.0%	21.9	9.4	C
	Subtotal	284	273	96.0%	25.8	3.0	C
WB	Left Turn	10	9	89.0%	12.6	13.8	B
	Through	957	805	84.1%	18.4	6.9	B
	Right Turn	84	70	83.5%	12.5	6.1	B
	Subtotal	1,051	884	84.1%	17.9	6.6	B
Total		1,380	1,191	86.3%	20.8	5.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 4

Alameda/Alpine

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	50	86.4%	27.6	C
	Through	392	356	90.8%	8.6	A
	Right Turn	12	12	97.5%	2.7	A
	Subtotal	462	418	90.4%	10.5	B
SB	Left Turn	171	152	88.9%	166.9	F
	Through	1,069	955	89.3%	232.4	F
	Right Turn	240	224	93.2%	211.0	F
	Subtotal	1,480	1,330	89.9%	221.7	F
EB	Left Turn	61	69	112.5%	18.7	B
	Through	122	112	91.9%	10.2	B
	Right Turn	65	57	88.0%	51.0	D
	Subtotal	248	238	95.9%	21.8	C
WB	Left Turn	49	39	78.8%	80.6	F
	Through	753	611	81.2%	25.3	C
	Right Turn	164	134	81.4%	7.5	A
	Subtotal	966	784	81.1%	25.0	C
Total		3,156	2,769	87.7%	115.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	60.0%	5.5	A
	Through	217	145	66.8%	12.1	B
	Right Turn	42	29	68.6%	9.0	A
	Subtotal	260	174	67.0%	11.6	B
SB	Left Turn	227	165	72.5%	141.7	F
	Through	493	331	67.1%	268.4	F
	Right Turn	544	379	69.7%	217.3	F
	Subtotal	1,264	875	69.2%	222.4	F
EB	Left Turn	68	60	88.1%	40.0	D
	Through	232	211	90.8%	26.3	C
	Right Turn	5	4	84.0%	35.0	C
	Subtotal	305	275	90.1%	29.9	C
WB	Left Turn					
	Through	421	400	95.1%	35.9	D
	Right Turn	185	177	95.8%	33.8	C
	Subtotal	606	578	95.3%	35.4	D
Total		2,435	1,901	78.1%	109.5	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	20	97.5%	8.3	A
	Through	609	568	93.3%	9.7	A
	Right Turn	164	157	95.6%	5.5	A
	Subtotal	793	745	93.9%	8.8	A
SB	Left Turn	61	50	82.3%	11.0	B
	Through	450	368	81.8%	9.3	A
	Right Turn	12	10	83.3%	6.9	A
	Subtotal	523	428	81.9%	9.5	A
EB	Left Turn	4	4	90.0%	15.2	B
	Through	4	4	95.0%	7.5	A
	Right Turn	6	7	118.3%	4.0	A
	Subtotal	14	15	103.6%	12.0	B
WB	Left Turn	123	126	102.0%	23.1	C
	Through	4	4	100.0%	18.2	B
	Right Turn	27	30	110.7%	5.4	A
	Subtotal	154	159	103.5%	19.7	B
Total		1,484	1,347	90.7%	10.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	217	226	104.1%	85.5	F
	Through	393	416	105.9%	26.1	C
	Right Turn	118	120	101.5%	6.1	A
	Subtotal	728	762	104.7%	40.0	D
SB	Left Turn	158	126	79.8%	43.9	D
	Through	418	347	82.9%	26.6	C
	Right Turn	33	28	85.8%	14.3	B
	Subtotal	609	501	82.2%	29.9	C
EB	Left Turn	57	53	92.5%	25.9	C
	Through	463	444	95.9%	32.3	C
	Right Turn	281	268	95.3%	15.3	B
	Subtotal	801	765	95.5%	26.1	C
WB	Left Turn	309	300	97.1%	27.2	C
	Through	1,264	1,183	93.6%	35.8	D
	Right Turn	339	308	90.9%	6.8	A
	Subtotal	1,912	1,791	93.7%	29.3	C
Total		4,050	3,818	94.3%	30.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	6	8	138.3%	46.1	D
	Through					
	Right Turn	8	7	87.5%	5.8	A
	Subtotal	14	15	109.3%	29.9	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	721	672	93.2%	1.9	A
	Right Turn	18	18	97.2%	5.1	A
	Subtotal	739	690	93.3%	2.0	A
WB	Left Turn	6	6	101.7%	33.8	C
	Through	1,902	1,766	92.8%	74.5	E
	Right Turn	32	27	84.7%	58.4	E
	Subtotal	1,940	1,799	92.7%	74.3	E
Total		2,693	2,504	93.0%	53.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	265	259	97.7%	59.2	E
	Through	501	506	101.0%	22.1	C
	Right Turn	90	88	97.6%	2.8	A
	Subtotal	856	853	99.6%	31.2	C
SB	Left Turn	26	23	88.5%	158.0	F
	Through	1,021	922	90.3%	163.5	F
	Right Turn	738	686	93.0%	228.1	F
	Subtotal	1,785	1,631	91.4%	192.0	F
EB	Left Turn	286	278	97.2%	51.0	D
	Through	265	249	93.8%	50.1	D
	Right Turn	178	151	84.9%	29.2	C
	Subtotal	729	678	93.0%	45.9	D
WB	Left Turn	305	291	95.2%	216.7	F
	Through	937	880	93.9%	211.9	F
	Right Turn	8	7	88.8%	215.1	F
	Subtotal	1,250	1,177	94.2%	213.1	F
Total		4,620	4,339	93.9%	143.9	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 10

Alameda/Alhambra

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	10	93.6%	11.6	8.7	B
	Through	447	408	91.3%	7.0	0.9	A
	Right Turn						
	Subtotal	458	419	91.4%	7.2	1.0	A
SB	Left Turn						
	Through	1,180	1,021	86.5%	120.5	24.9	F
	Right Turn	3	3	110.0%	18.8	41.1	B
	Subtotal	1,183	1,024	86.5%	120.5	24.8	F
EB	Left Turn						
	Through						
	Right Turn	10	10	100.0%	17.0	10.0	B
	Subtotal	10	10	100.0%	17.0	10.0	B
WB	Left Turn	467	293	62.8%	346.9	36.9	F
	Through	16	10	59.4%	302.9	78.1	F
	Right Turn	15	9	60.7%	305.0	117.3	F
	Subtotal	498	312	62.6%	345.5	37.0	F
Total		2,149	1,764	82.1%	131.2	18.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
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AM Peak Hour

Intersection 11		Hill/Ord			Signal		
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	15	14	96.0%	9.3	5.3	A
	Through	276	301	109.1%	9.3	2.3	A
	Right Turn	22	24	107.3%	7.4	4.1	A
	Subtotal	313	339	108.3%	9.2	2.3	A
SB	Left Turn	42	47	111.4%	9.5	3.5	A
	Through	739	760	102.9%	9.8	3.5	A
	Right Turn	15	14	94.7%	10.8	9.0	B
	Subtotal	796	821	103.2%	9.9	3.3	A
EB	Left Turn	10	9	93.0%	18.5	15.5	B
	Through	76	75	99.1%	25.9	7.6	C
	Right Turn	10	11	113.0%	23.8	14.4	C
	Subtotal	96	96	99.9%	25.0	5.5	C
WB	Left Turn	46	41	90.0%	30.2	3.6	C
	Through	257	223	86.7%	30.0	3.4	C
	Right Turn	30	28	92.7%	12.5	5.9	B
	Subtotal	333	292	87.7%	28.3	2.8	C
Total		1,538	1,548	100.7%	14.4	2.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 12 Broadway/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	62	87.6%	42.0	D
	Through	385	324	84.2%	7.8	A
	Right Turn	74	57	76.5%	80.9	F
	Subtotal	530	443	83.6%	24.1	C
SB	Left Turn	83	106	127.6%	96.8	F
	Through	1,244	1,219	98.0%	32.7	C
	Right Turn	144	135	94.0%	32.7	C
	Subtotal	1,471	1,460	99.3%	37.6	D
EB	Left Turn	9	9	102.2%	63.9	E
	Through	90	92	102.3%	63.3	E
	Right Turn	41	43	105.9%	49.2	D
	Subtotal	140	145	103.4%	58.6	E
WB	Left Turn	64	40	62.2%	149.0	F
	Through	118	74	62.9%	93.8	F
	Right Turn	38	33	87.1%	43.2	D
	Subtotal	220	147	66.9%	93.2	F
Total		2,361	2,195	93.0%	39.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	564	444	78.7%	5.7	A
	Right Turn	45	36	80.0%	4.7	A
	Subtotal	609	480	78.8%	5.7	A
SB	Left Turn	34	25	74.4%	10.5	B
	Through	1,466	1,132	77.2%	41.1	D
	Right Turn					
	Subtotal	1,500	1,157	77.1%	40.5	D
EB	Left Turn	204	194	95.1%	29.5	C
	Through	47	42	88.9%	24.5	C
	Right Turn	16	19	118.1%	39.4	D
	Subtotal	267	255	95.4%	29.5	C
WB	Left Turn	21	21	100.5%	58.3	E
	Through					
	Right Turn	8	6	80.0%	4.9	A
	Subtotal	29	28	94.8%	46.1	D
Total		2,405	1,919	79.8%	29.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	128	108	84.5%	29.4	C
	Through	337	267	79.1%	22.6	C
	Right Turn	123	100	81.1%	18.5	B
	Subtotal	588	475	80.7%	23.4	C
SB	Left Turn	136	133	97.4%	57.3	E
	Through	840	806	95.9%	47.5	D
	Right Turn	373	360	96.6%	34.9	C
	Subtotal	1,349	1,299	96.3%	45.0	D
EB	Left Turn	139	140	100.6%	43.3	D
	Through	767	788	102.7%	22.6	C
	Right Turn	112	114	101.7%	14.3	B
	Subtotal	1,018	1,042	102.3%	24.7	C
WB	Left Turn	139	125	89.8%	13.8	B
	Through	1,435	1,245	86.7%	12.0	B
	Right Turn	54	42	76.9%	3.8	A
	Subtotal	1,628	1,411	86.7%	11.9	B
Total		4,583	4,226	92.2%	26.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	3	3	93.3%	27.2	C
	Through	349	317	90.7%	90.2	F
	Right Turn	170	149	87.5%	85.4	F
	Subtotal	522	468	89.7%	88.5	F
EB	Left Turn					
	Through	714	708	99.2%	9.2	A
	Right Turn	312	327	104.9%	4.7	A
	Subtotal	1,026	1,035	100.9%	7.7	A
WB	Left Turn	233	240	103.1%	51.8	D
	Through	1,458	1,233	84.5%	51.4	D
	Right Turn	17	13	75.9%	18.7	B
	Subtotal	1,708	1,486	87.0%	51.2	D
Total		3,256	2,989	91.8%	42.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 16

Main/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	146	126	86.2%	42.3	D
	Through	183	169	92.4%	32.0	C
	Right Turn	107	106	99.3%	22.5	C
	Subtotal	436	401	92.0%	33.0	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	70	70	99.4%	29.5	C
	Through	647	664	102.7%	3.3	A
	Right Turn					
	Subtotal	717	734	102.4%	5.8	A
WB	Left Turn					
	Through	1,546	1,331	86.1%	17.7	B
	Right Turn	14	16	117.1%	5.2	A
	Subtotal	1,560	1,347	86.4%	17.5	B
Total		2,713	2,482	91.5%	16.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	145	122	84.3%	141.0	F
	Through	501	398	79.4%	25.4	C
	Right Turn	181	182	100.8%	25.5	C
	Subtotal	827	703	84.9%	49.9	D
SB	Left Turn	99	82	82.3%	19.9	B
	Through	1,214	938	77.2%	49.5	D
	Right Turn	190	148	77.9%	31.9	C
	Subtotal	1,503	1,167	77.7%	45.5	D
EB	Left Turn	78	75	95.9%	16.6	B
	Through	549	580	105.6%	8.0	A
	Right Turn	127	125	98.7%	10.2	B
	Subtotal	754	780	103.4%	9.0	A
WB	Left Turn	164	151	91.8%	32.8	C
	Through	1,225	1,109	90.5%	57.7	E
	Right Turn	30	20	67.3%	40.0	D
	Subtotal	1,419	1,280	90.2%	54.6	D
Total		4,503	3,929	87.3%	41.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 18

Union Station Driveway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	24	3	12.1%	35.1	D
	Through					
	Right Turn	55	5	8.4%	11.5	B
	Subtotal	79	8	9.5%	33.1	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	746	761	102.0%	1.0	A
	Right Turn	83	81	97.0%	1.5	A
	Subtotal	829	841	101.5%	1.0	A
WB	Left Turn	84	67	79.5%	96.9	F
	Through	1,430	1,327	92.8%	136.0	F
	Right Turn					
	Subtotal	1,514	1,394	92.1%	134.1	F
Total		2,422	2,243	92.6%	83.5	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	697	571	81.9%	40.0	D
	Right Turn	40	20	48.8%	21.4	C
	Subtotal	737	591	80.1%	39.2	D
SB	Left Turn	61	60	97.7%	84.7	F
	Through	1,115	888	79.7%	71.4	E
	Right Turn	329	264	80.1%	79.0	E
	Subtotal	1,505	1,212	80.5%	73.8	E
EB	Left Turn	100	101	101.2%	76.3	E
	Through	56	50	89.3%	101.3	F
	Right Turn	20	17	84.5%	131.2	F
	Subtotal	176	168	95.5%	89.8	F
WB	Left Turn	111	90	80.9%	27.9	C
	Through	60	58	96.7%	22.6	C
	Right Turn	30	44	148.0%	36.0	D
	Subtotal	201	192	95.6%	28.4	C
Total		2,619	2,162	82.6%	61.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 20 Broadway/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	466	496	106.3%	11.4	B
	Right Turn					
	Subtotal	466	496	106.3%	11.4	B
SB	Left Turn					
	Through	762	726	95.3%	14.5	B
	Right Turn					
	Subtotal	762	726	95.3%	14.5	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	365	227	62.1%	21.0	C
	Through					
	Right Turn	829	513	61.9%	7.4	A
	Subtotal	1,194	739	61.9%	11.7	B
Total		2,422	1,961	81.0%	12.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 21

Spring/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	877	712	81.2%	26.2	C
	Right Turn	35	31	88.3%	5.8	A
	Subtotal	912	743	81.4%	25.5	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	529	381	72.0%	29.9	C
	Through	1,159	708	61.1%	31.7	C
	Right Turn					
	Subtotal	1,688	1,089	64.5%	31.1	C
Total		2,600	1,832	70.5%	28.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 22 Main/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	80	82	102.1%	10.3	B
	Through	355	354	99.6%	5.1	A
	Right Turn					
	Subtotal	435	435	100.1%	6.1	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	1,608	1,002	62.3%	24.9	C
	Right Turn	81	48	58.9%	24.1	C
	Subtotal	1,689	1,050	62.1%	24.9	C
Total		2,124	1,485	69.9%	19.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	88	83	94.3%	13.7	B
	Through	265	272	102.8%	5.1	A
	Right Turn					
	Subtotal	353	355	100.7%	7.2	A
SB	Left Turn					
	Through	347	286	82.4%	22.0	C
	Right Turn	38	32	83.7%	25.1	C
	Subtotal	385	318	82.5%	22.2	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	360	196	54.4%	38.5	D
	Through	1,563	938	60.0%	45.7	D
	Right Turn	71	40	56.6%	41.7	D
	Subtotal	1,994	1,174	58.9%	44.5	D
Total		2,732	1,847	67.6%	33.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	143	125	87.7%	106.2	F
	Through	849	768	90.5%	32.9	C
	Right Turn	50	83	166.8%	25.0	C
	Subtotal	1,042	977	93.8%	41.9	D
SB	Left Turn	13	28	216.9%	57.8	E
	Through	939	714	76.0%	82.2	F
	Right Turn	69	58	83.8%	80.1	F
	Subtotal	1,021	800	78.3%	81.1	F
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	484	260	53.8%	186.3	F
	Through	1,782	987	55.4%	234.6	F
	Right Turn	274	137	49.9%	219.7	F
	Subtotal	2,540	1,384	54.5%	224.0	F
Total		4,603	3,161	68.7%	130.5	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	93	90	97.0%	44.4	D
	Through	264	206	78.0%	26.0	C
	Right Turn	101	102	101.1%	5.8	A
	Subtotal	458	398	87.0%	24.6	C
SB	Left Turn	591	514	87.0%	62.8	E
	Through	302	256	84.8%	35.0	D
	Right Turn	353	256	72.5%	39.0	D
	Subtotal	1,246	1,026	82.3%	50.1	D
EB	Left Turn	235	276	117.3%	54.9	D
	Through					
	Right Turn					
	Subtotal	235	276	117.3%	54.9	D
WB	Left Turn	109	105	96.1%	36.8	D
	Through	149	172	115.1%	81.2	F
	Right Turn	373	376	100.8%	12.9	B
	Subtotal	631	652	103.3%	34.9	C
Total		2,570	2,352	91.5%	42.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 26 Broadway/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	331	366	110.4%	10.0	A
	Right Turn	83	87	104.2%	4.1	A
	Subtotal	414	452	109.2%	8.9	A
SB	Left Turn	144	122	84.7%	11.2	B
	Through	983	827	84.1%	7.3	A
	Right Turn					
	Subtotal	1,127	949	84.2%	7.8	A
EB	Left Turn	135	133	98.1%	23.7	C
	Through	279	285	102.2%	20.5	C
	Right Turn	163	173	105.8%	10.0	A
	Subtotal	577	590	102.3%	18.3	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,118	1,991	94.0%	11.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 27

Spring/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	171	152	88.9%	1.3	A
	Through	1,235	1,091	88.3%	11.8	B
	Right Turn					
	Subtotal	1,406	1,243	88.4%	10.6	B
EB	Left Turn					
	Through	309	301	97.3%	17.9	B
	Right Turn	197	191	97.1%	8.5	A
	Subtotal	506	492	97.2%	14.2	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,912	1,735	90.7%	11.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	388	392	101.1%	7.9	A
	Right Turn	217	218	100.5%	19.7	B
	Subtotal	605	610	100.8%	12.2	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	47	43	92.3%	9.4	A
	Through	433	441	101.7%	16.1	B
	Right Turn					
	Subtotal	480	484	100.8%	15.5	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,085	1,094	100.8%	13.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	334	336	100.7%	15.3	2.1	B
	Right Turn	85	144	169.1%	17.0	1.9	B
	Subtotal	479	480	100.2%	15.9	1.3	B
SB	Left Turn						
	Through	707	482	68.1%	10.5	1.2	B
	Right Turn						
	Subtotal	707	482	68.1%	10.5	1.2	B
EB	Left Turn	252	262	103.8%	18.3	2.8	B
	Through	222	250	112.5%	31.5	5.4	C
	Right Turn	157	149	94.7%	30.8	5.1	C
	Subtotal	650	660	101.5%	26.2	2.7	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,836	1,622	88.3%	18.5	1.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 30

Alameda/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	777	690	88.8%	220.3	40.0	F
	Right Turn	158	149	94.3%	88.0	29.2	F
	Subtotal	935	839	89.7%	197.9	40.2	F
SB	Left Turn	200	139	69.4%	36.4	7.6	D
	Through	1,223	836	68.4%	16.1	1.9	B
	Right Turn						
	Subtotal	1,423	975	68.5%	19.2	2.3	B
EB	Left Turn	59	95	160.3%	46.3	6.0	D
	Through	66	68	102.3%	31.0	8.5	C
	Right Turn	157	153	97.4%	8.4	1.8	A
	Subtotal	282	315	111.7%	25.4	2.4	C
WB	Left Turn	149	139	93.4%	19.3	3.2	B
	Through						
	Right Turn	206	195	94.4%	52.3	12.7	D
	Subtotal	355	334	94.0%	39.0	8.4	D
Total		2,995	2,462	82.2%	82.8	11.8	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 31

US 101 Ramps/Commercial

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	13	14	103.8%	32.9	9.5	C
	Through	43	41	95.3%	35.4	5.0	D
	Right Turn	7	8	107.1%	7.3	3.3	A
	Subtotal	63	62	98.4%	31.8	5.6	C
SB	Left Turn	218	229	105.0%	31.2	5.0	C
	Through	63	65	103.2%	30.7	6.9	C
	Right Turn	200	191	95.3%	5.8	0.9	A
	Subtotal	481	484	100.7%	21.0	3.2	C
EB	Left Turn	271	226	83.3%	24.8	3.8	C
	Through	77	69	89.5%	19.0	4.6	B
	Right Turn	26	20	78.1%	8.2	4.1	A
	Subtotal	374	315	84.2%	22.4	3.3	C
WB	Left Turn	10	9	92.0%	33.6	11.5	C
	Through	122	107	87.9%	34.3	4.5	C
	Right Turn	176	161	91.5%	19.4	1.9	B
	Subtotal	308	277	90.1%	25.8	3.1	C
Total		1,226	1,139	92.9%	23.2	2.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 32

Broadway/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	1	1	110.0%	8.6	16.0	A
	Through	363	404	111.2%	8.2	0.6	A
	Right Turn						
	Subtotal	364	405	111.2%	8.3	0.7	A
SB	Left Turn	55	47	84.9%	7.4	1.5	A
	Through	1,028	894	86.9%	7.6	0.8	A
	Right Turn	63	66	104.6%	9.8	1.7	A
	Subtotal	1,146	1,006	87.8%	7.8	0.8	A
EB	Left Turn	25	26	102.4%	31.4	6.3	C
	Through	585	605	103.4%	19.8	1.2	B
	Right Turn	154	151	98.1%	17.0	2.6	B
	Subtotal	764	782	102.3%	19.7	1.2	B
WB	Left Turn	79	60	76.3%	27.3	4.1	C
	Through	973	869	89.4%	16.7	1.0	B
	Right Turn	26	22	85.0%	14.4	2.7	B
	Subtotal	1,078	952	88.3%	17.3	0.9	B
Total		3,352	3,145	93.8%	13.7	0.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 33

Spring/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	59	47	79.5%	36.5	10.0	D
	Through	1,172	1,062	90.6%	34.4	9.1	C
	Right Turn	201	168	83.8%	32.3	8.1	C
	Subtotal	1,432	1,277	89.2%	34.1	8.4	C
EB	Left Turn						
	Through	499	524	104.9%	18.8	2.0	B
	Right Turn	141	139	98.3%	21.2	3.6	C
	Subtotal	640	662	103.5%	19.4	2.1	B
WB	Left Turn	113	112	98.8%	10.2	1.4	B
	Through	877	811	92.5%	9.1	0.7	A
	Right Turn						
	Subtotal	990	923	93.2%	9.2	0.7	A
Total		3,062	2,862	93.5%	22.8	3.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 34

Main/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	120	127	106.0%	18.9	3.1	B
	Through	457	475	103.9%	19.3	1.3	B
	Right Turn	174	178	102.2%	18.5	9.4	B
	Subtotal	751	780	103.8%	19.1	2.3	B
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	60	61	102.3%	15.2	3.1	B
	Through	498	505	101.4%	20.2	8.0	C
	Right Turn						
	Subtotal	558	567	101.5%	19.6	7.3	B
WB	Left Turn						
	Through	870	786	90.3%	13.0	2.0	B
	Right Turn	88	79	89.4%	13.1	4.7	B
	Subtotal	958	865	90.3%	13.1	2.1	B
Total		2,267	2,155	95.1%	23.5	18.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 35

Los Angeles/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	75	75	99.6%	26.4	10.3	C
	Through	331	333	100.6%	13.8	1.7	B
	Right Turn	60	63	105.7%	19.0	6.7	B
	Subtotal	466	471	101.1%	16.6	2.0	B
SB	Left Turn	175	137	78.3%	22.0	4.2	C
	Through	872	694	79.6%	17.4	2.3	B
	Right Turn	86	78	90.9%	24.5	2.3	C
	Subtotal	1,133	909	80.3%	18.8	1.6	B
EB	Left Turn	31	45	145.5%	72.5	24.4	E
	Through	400	415	103.8%	24.3	2.1	C
	Right Turn	241	220	91.1%	24.5	3.9	C
	Subtotal	672	680	101.1%	27.8	3.7	C
WB	Left Turn	109	96	88.4%	36.9	5.8	D
	Through	797	711	89.2%	48.2	11.9	D
	Right Turn	117	102	86.8%	39.8	11.1	D
	Subtotal	1,023	909	88.8%	46.3	10.9	D
Total		3,294	2,969	90.1%	28.9	4.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 36

San Pedro/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	76	78	102.9%	26.9	9.1	C
	Through						
	Right Turn	42	49	116.9%	11.8	3.0	B
	Subtotal	118	127	107.9%	21.1	5.1	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	369	365	99.0%	9.5	1.3	A
	Right Turn	266	248	93.2%	13.6	3.1	B
	Subtotal	635	613	96.6%	11.3	1.6	B
WB	Left Turn	149	147	98.9%	18.7	6.3	B
	Through	947	827	87.4%	11.6	1.8	B
	Right Turn						
	Subtotal	1,096	975	88.9%	12.6	1.8	B
Total		1,849	1,715	92.8%	12.7	1.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 37

Alameda/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	240	226	94.0%	80.9	25.3	F
	Through	771	710	92.1%	149.8	55.4	F
	Right Turn						
	Subtotal	1,011	936	92.6%	132.6	47.8	F
SB	Left Turn	67	47	70.1%	46.4	10.6	D
	Through	970	721	74.4%	28.8	2.5	C
	Right Turn	492	363	73.8%	10.8	1.7	B
	Subtotal	1,529	1,131	74.0%	23.6	1.9	C
EB	Left Turn	95	92	96.6%	36.4	12.2	D
	Through	186	199	107.2%	23.6	3.8	C
	Right Turn	130	120	92.2%	37.2	6.0	D
	Subtotal	411	411	100.0%	30.4	3.8	C
WB	Left Turn	28	28	98.9%	67.7	13.4	E
	Through	364	389	106.9%	77.6	9.7	E
	Right Turn	69	73	105.2%	100.2	20.4	F
	Subtotal	461	489	106.1%	80.0	10.2	E
Total		3,412	2,967	87.0%	66.9	14.2	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	446	441	98.9%	16.0	2.2	B
	Right Turn						
	Subtotal	446	441	98.9%	16.0	2.2	B
SB	Left Turn	51	42	81.6%	22.6	6.2	C
	Through	1,017	839	82.5%	19.5	1.7	B
	Right Turn	154	132	85.5%	8.4	2.2	A
	Subtotal	1,222	1,012	82.8%	18.2	1.6	B
EB	Left Turn	10	18	175.0%	34.8	14.8	C
	Through	513	531	103.5%	14.8	1.9	B
	Right Turn	93	94	101.1%	7.3	1.5	A
	Subtotal	616	643	104.3%	14.4	1.6	B
WB	Left Turn	46	36	77.8%	22.2	10.1	C
	Through	787	764	97.1%	12.5	2.2	B
	Right Turn	10	10	96.0%	2.4	2.5	A
	Subtotal	843	810	96.0%	12.9	2.1	B
Total		3,127	2,905	92.9%	15.6	1.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	15	23	154.7%	33.9	9.6	C
	Through	98	98	99.7%	19.8	4.1	B
	Right Turn	21	20	94.8%	6.7	3.0	A
	Subtotal	134	141	105.1%	20.7	3.4	C
SB	Left Turn	15	12	79.3%	19.5	8.0	B
	Through	379	347	91.7%	20.1	2.2	C
	Right Turn	21	36	169.5%	30.3	7.4	C
	Subtotal	415	395	95.2%	20.8	2.1	C
EB	Left Turn	10	23	226.0%	31.9	9.4	C
	Through	539	536	99.4%	6.5	0.8	A
	Right Turn	15	16	104.7%	6.3	4.9	A
	Subtotal	564	574	101.8%	7.4	0.7	A
WB	Left Turn	33	29	89.1%	19.7	6.2	B
	Through	807	764	94.6%	18.5	5.6	B
	Right Turn	10	8	79.0%	13.7	9.1	B
	Subtotal	850	801	94.2%	18.5	5.5	B
Total		1,963	1,911	97.3%	15.9	2.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 40

Central/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	154	155	100.7%	22.0	3.6	C
	Through						
	Right Turn	12	12	103.3%	5.8	3.9	A
	Subtotal	166	168	100.9%	20.9	3.5	C
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	472	485	102.8%	17.6	2.1	B
	Right Turn	103	104	101.1%	12.2	2.4	B
	Subtotal	575	589	102.5%	16.7	2.0	B
WB	Left Turn	26	23	86.5%	12.4	11.5	B
	Through	696	665	95.5%	9.2	1.9	A
	Right Turn						
	Subtotal	722	687	95.2%	9.3	1.8	A
Total		1,463	1,444	98.7%	13.7	1.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
AM Peak Hour

Intersection 41

Alameda/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	4	4	95.0%	40.6	72.7	D
	Through	953	896	94.0%	128.7	74.3	F
	Right Turn	50	49	98.2%	77.8	59.2	E
	Subtotal	1,007	949	94.2%	125.9	73.3	F
SB	Left Turn	24	18	75.0%	44.2	16.4	D
	Through	913	704	77.1%	16.1	2.1	B
	Right Turn	191	144	75.5%	15.3	5.3	B
	Subtotal	1,128	866	76.8%	16.6	2.3	B
EB	Left Turn	31	30	97.4%	23.9	8.3	C
	Through	402	419	104.2%	11.6	1.7	B
	Right Turn	51	49	96.3%	13.1	2.9	B
	Subtotal	484	498	103.0%	12.6	1.7	B
WB	Left Turn						
	Through	527	535	101.6%	24.0	4.4	C
	Right Turn	27	29	106.3%	28.7	11.6	C
	Subtotal	554	564	101.8%	24.3	4.1	C
Total		3,173	2,877	90.7%	50.7	21.1	D

PM PROJECT

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	32	32	100.9%	19.3	B
	Through	665	675	101.4%	16.7	B
	Right Turn	67	69	103.1%	15.9	B
	Subtotal	764	776	101.6%	16.7	B
SB	Left Turn	15	14	90.7%	10.7	B
	Through	435	456	104.8%	9.1	A
	Right Turn	26	25	94.2%	10.1	B
	Subtotal	476	494	103.7%	9.2	A
EB	Left Turn	47	43	92.3%	22.0	C
	Through	293	294	100.4%	18.3	B
	Right Turn	16	16	100.0%	7.5	A
	Subtotal	356	354	99.3%	18.3	B
WB	Left Turn	32	29	90.9%	28.5	C
	Through	340	317	93.1%	30.1	C
	Right Turn	82	74	90.1%	21.5	C
	Subtotal	454	420	92.4%	28.6	C
Total		2,050	2,043	99.7%	17.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	46	79.5%	20.0	B
	Through	1,134	1,033	91.0%	21.3	C
	Right Turn	100	101	101.0%	21.9	C
	Subtotal	1,292	1,180	91.3%	21.3	C
SB	Left Turn	55	53	96.9%	23.8	C
	Through	649	677	104.3%	12.9	B
	Right Turn	48	47	97.1%	12.0	B
	Subtotal	752	777	103.3%	13.6	B
EB	Left Turn	79	82	103.3%	19.3	B
	Through	254	257	101.2%	11.1	B
	Right Turn	42	40	96.2%	6.3	A
	Subtotal	375	379	101.1%	12.3	B
WB	Left Turn	52	60	115.4%	24.4	C
	Through	348	329	94.5%	26.8	C
	Right Turn	254	236	93.0%	28.9	C
	Subtotal	654	625	95.6%	27.5	C
Total		3,073	2,961	96.3%	19.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	7	5	67.1%	53.3	D
	Through					
	Right Turn	102	77	75.3%	27.0	C
	Subtotal	109	82	74.8%	30.2	C
SB	Left Turn	17	16	95.3%	34.8	C
	Through	29	26	89.3%	41.7	D
	Right Turn	8	8	102.5%	9.6	A
	Subtotal	54	50	93.1%	34.4	C
EB	Left Turn	10	12	116.0%	34.8	C
	Through	390	386	98.9%	18.2	B
	Right Turn	15	13	85.3%	28.3	C
	Subtotal	415	410	98.8%	18.7	B
WB	Left Turn	7	7	94.3%	7.4	A
	Through	646	608	94.1%	10.8	B
	Right Turn	13	12	89.2%	9.3	A
	Subtotal	666	626	94.0%	10.8	B
Total		1,244	1,168	93.9%	16.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 4

Alameda/Alpine

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	179	159	88.7%	17.1	B
	Through	1,112	960	86.3%	12.4	B
	Right Turn	49	45	91.0%	10.9	B
	Subtotal	1,340	1,163	86.8%	13.0	B
SB	Left Turn	116	114	98.1%	46.3	D
	Through	500	520	104.1%	14.4	B
	Right Turn	57	69	121.1%	9.5	A
	Subtotal	673	703	104.5%	20.2	C
EB	Left Turn	102	101	99.1%	19.6	B
	Through	335	326	97.3%	21.7	C
	Right Turn	72	72	100.0%	6.6	A
	Subtotal	509	499	98.0%	19.3	B
WB	Left Turn	55	52	94.7%	26.9	C
	Through	430	399	92.9%	19.5	B
	Right Turn	393	369	93.9%	11.3	B
	Subtotal	878	820	93.4%	16.2	B
Total		3,400	3,185	93.7%	16.4	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	5	2	46.0%	9.3	A
	Through	657	470	71.6%	21.4	C
	Right Turn	35	26	75.4%	18.2	B
	Subtotal	697	499	71.6%	21.2	C
SB	Left Turn	201	196	97.4%	33.1	C
	Through	275	269	97.9%	22.4	C
	Right Turn	186	183	98.2%	15.6	B
	Subtotal	662	648	97.8%	23.6	C
EB	Left Turn	228	224	98.2%	67.8	E
	Through	271	261	96.2%	24.2	C
	Right Turn	1	1	90.0%	0.0	A
	Subtotal	500	486	97.1%	43.7	D
WB	Left Turn					
	Through	687	635	92.4%	35.8	D
	Right Turn	370	339	91.5%	42.5	D
	Subtotal	1,057	974	92.1%	38.3	D
Total		2,916	2,606	89.4%	32.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	31	24	76.5%	13.9	B
	Through	980	883	90.1%	12.1	B
	Right Turn	57	55	96.0%	6.9	A
	Subtotal	1,068	961	90.0%	11.8	B
SB	Left Turn	27	25	93.7%	21.4	C
	Through	463	442	95.4%	9.9	A
	Right Turn	5	5	96.0%	4.5	A
	Subtotal	495	472	95.3%	10.5	B
EB	Left Turn	11	13	119.1%	17.8	B
	Through	5	5	106.0%	17.4	B
	Right Turn	20	20	98.0%	5.6	A
	Subtotal	36	38	105.6%	12.3	B
WB	Left Turn	263	263	100.0%	23.8	C
	Through	6	7	108.3%	11.1	B
	Right Turn	81	80	99.1%	6.0	A
	Subtotal	350	350	99.9%	19.7	B
Total		1,949	1,821	93.4%	13.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	319	275	86.3%	192.3	F
	Through	719	690	95.9%	58.9	E
	Right Turn	208	198	95.3%	19.3	B
	Subtotal	1,246	1,163	93.4%	83.0	F
SB	Left Turn	296	274	92.6%	45.1	D
	Through	426	393	92.2%	33.4	C
	Right Turn	62	54	87.6%	25.4	C
	Subtotal	784	721	92.0%	37.7	D
EB	Left Turn	45	43	96.0%	44.0	D
	Through	948	868	91.5%	45.9	D
	Right Turn	299	292	97.7%	26.4	C
	Subtotal	1,292	1,203	93.1%	41.1	D
WB	Left Turn	198	194	97.9%	47.5	D
	Through	878	762	86.8%	76.8	E
	Right Turn	304	259	85.0%	7.1	A
	Subtotal	1,380	1,214	88.0%	56.4	E
Total		4,702	4,302	91.5%	55.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	3	3	110.0%	28.8	C
	Through					
	Right Turn	4	4	92.5%	3.3	A
	Subtotal	7	7	100.0%	17.7	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,450	1,340	92.4%	1.9	A
	Right Turn	2	2	90.0%	3.9	A
	Subtotal	1,452	1,341	92.4%	1.9	A
WB	Left Turn	14	0	0.0%	0.0	A
	Through	1,377	1,203	87.3%	247.3	F
	Right Turn	7	0	0.0%	0.0	A
	Subtotal	1,398	1,203	86.0%	242.4	F
Total		2,857	2,551	89.3%	109.1	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	348	249	71.5%	804.0	F
	Through	581	495	85.2%	82.2	F
	Right Turn	83	74	88.6%	53.0	D
	Subtotal	1,012	817	80.8%	321.5	F
SB	Left Turn	46	49	107.2%	42.2	D
	Through	476	466	97.8%	46.8	D
	Right Turn	366	376	102.7%	107.7	F
	Subtotal	888	891	100.3%	69.5	E
EB	Left Turn	445	436	97.9%	47.0	D
	Through	663	598	90.3%	49.4	D
	Right Turn	346	301	86.9%	36.3	D
	Subtotal	1,454	1,335	91.8%	45.8	D
WB	Left Turn	172	166	96.3%	82.4	F
	Through	684	663	97.0%	107.2	F
	Right Turn	27	25	91.5%	105.6	F
	Subtotal	883	854	96.7%	101.9	F
Total		4,237	3,896	92.0%	101.9	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 10

Alameda/Hambra

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1,325	1,148	86.6%	11.2	B
	Through					
	Right Turn					
	Subtotal	1,325	1,148	86.6%	11.2	B
SB	Left Turn	622	640	102.9%	3.2	A
	Through					
	Right Turn					
	Subtotal	627	645	102.9%	3.2	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	260	255	98.2%	43.4	D
	Through					
	Right Turn					
	Subtotal	276	271	98.3%	43.3	D
Total		2,228	2,064	92.6%	13.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	21	23	107.6%	12.2	B
	Through	655	671	102.5%	12.5	B
	Right Turn	64	63	98.9%	11.6	B
	Subtotal	740	757	102.3%	12.4	B
SB	Left Turn	51	52	102.5%	17.7	B
	Through	411	421	102.5%	8.1	A
	Right Turn	21	21	99.5%	11.3	B
	Subtotal	483	495	102.4%	9.2	A
EB	Left Turn	15	16	106.7%	26.3	C
	Through	213	215	100.8%	19.2	B
	Right Turn	31	32	101.9%	16.4	B
	Subtotal	259	262	101.2%	19.2	B
WB	Left Turn	30	27	91.3%	25.5	C
	Through	185	170	92.0%	16.1	B
	Right Turn	94	83	88.3%	7.2	A
	Subtotal	309	281	90.8%	14.6	B
Total		1,791	1,794	100.2%	12.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 12 Broadway/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	119	105	88.1%	40.1	D
	Through	1,040	929	89.3%	21.9	C
	Right Turn	65	59	90.5%	24.2	C
	Subtotal	1,224	1,092	89.2%	24.1	C
SB	Left Turn	61	84	138.0%	36.6	D
	Through	636	644	101.3%	10.8	B
	Right Turn	46	45	97.0%	16.2	B
	Subtotal	743	773	104.0%	14.1	B
EB	Left Turn	121	119	98.4%	20.6	C
	Through	124	124	99.8%	21.4	C
	Right Turn	83	87	104.7%	14.7	B
	Subtotal	328	330	100.5%	19.4	B
WB	Left Turn	39	29	73.3%	36.1	D
	Through	144	104	72.0%	32.3	C
	Right Turn	131	99	75.8%	27.2	C
	Subtotal	314	232	73.8%	30.1	C
Total		2,609	2,427	93.0%	20.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 13

Alameda/Main

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,101	922	83.7%	4.2	A
	Right Turn	13	10	75.4%	3.2	A
	Subtotal	1,114	932	83.6%	4.2	A
SB	Left Turn	16	17	108.8%	27.6	C
	Through	882	887	100.6%	27.2	C
	Right Turn					
	Subtotal	898	905	100.7%	27.2	C
EB	Left Turn	948	736	77.6%	38.0	D
	Through	23	19	81.7%	43.0	D
	Right Turn	37	32	85.9%	21.4	C
	Subtotal	1,008	787	78.0%	37.7	D
WB	Left Turn	42	43	101.4%	51.1	D
	Through					
	Right Turn	73	74	101.2%	6.6	A
	Subtotal	115	117	101.3%	22.9	C
Total		3,135	2,739	87.4%	22.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	192	179	93.0%	39.4	D
	Through	855	788	92.2%	36.7	D
	Right Turn	182	171	93.9%	63.7	E
	Subtotal	1,229	1,138	92.6%	41.6	D
SB	Left Turn	112	113	100.5%	101.0	F
	Through	443	444	100.3%	25.6	C
	Right Turn	203	200	98.3%	10.2	B
	Subtotal	758	757	99.8%	32.3	C
EB	Left Turn	210	189	90.2%	185.9	F
	Through	1,055	978	92.7%	178.9	F
	Right Turn	64	59	91.4%	91.6	F
	Subtotal	1,329	1,226	92.2%	176.7	F
WB	Left Turn	139	118	85.1%	47.8	D
	Through	1,203	1,018	84.6%	16.0	B
	Right Turn	159	128	80.2%	7.6	A
	Subtotal	1,501	1,264	84.2%	18.0	B
Total		4,817	4,384	91.0%	68.6	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	30	28	91.7%	46.1	D
	Through	99	99	99.8%	37.8	D
	Right Turn	72	68	94.0%	30.8	C
	Subtotal	201	194	96.5%	36.1	D
EB	Left Turn					
	Through	1,126	1,060	94.1%	16.2	B
	Right Turn	223	219	98.4%	5.4	A
	Subtotal	1,349	1,279	94.8%	14.3	B
WB	Left Turn	179	183	102.3%	56.4	E
	Through	1,429	1,173	82.1%	54.9	D
	Right Turn	100	78	78.1%	21.3	C
	Subtotal	1,708	1,434	83.9%	53.2	D
Total		3,258	2,907	89.2%	35.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	427	340	79.7%	42.6	D
	Through	880	661	75.1%	33.9	C
	Right Turn	278	217	78.0%	22.3	C
	Subtotal	1,585	1,218	76.9%	34.7	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	105	100	95.2%	120.0	F
	Through	1,051	1,007	95.8%	41.8	D
	Right Turn					
	Subtotal	1,156	1,107	95.8%	49.4	D
WB	Left Turn					
	Through	1,296	1,057	81.5%	30.0	C
	Right Turn	23	21	89.6%	7.6	A
	Subtotal	1,319	1,077	81.7%	29.7	C
Total		4,060	3,403	83.8%	37.9	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	113	100	88.5%	131.9	F
	Through	848	712	84.0%	48.2	D
	Right Turn	181	160	88.6%	48.7	D
	Subtotal	1,142	973	85.2%	58.2	E
SB	Left Turn	100	100	100.0%	21.9	C
	Through	699	694	99.2%	43.0	D
	Right Turn	162	163	100.6%	21.7	C
	Subtotal	961	957	99.5%	37.2	D
EB	Left Turn	150	134	89.2%	63.9	E
	Through	969	904	93.3%	16.7	B
	Right Turn	210	195	93.0%	3.4	A
	Subtotal	1,329	1,233	92.8%	19.5	B
WB	Left Turn	173	131	75.8%	45.0	D
	Through	1,044	837	80.2%	75.8	E
	Right Turn	116	85	73.4%	52.6	D
	Subtotal	1,333	1,053	79.0%	69.9	E
Total		4,765	4,215	88.5%	44.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 18

Union Station Driveway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	3	3.9%	12.5	B
	Through					
	Right Turn	129	5	3.5%	35.8	D
	Subtotal	200	7	3.7%	43.6	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,163	1,015	87.3%	230.5	F
	Right Turn	87	17	19.2%	182.5	F
	Subtotal	1,250	1,032	82.6%	229.7	F
WB	Left Turn	22	77	348.6%	3.8	A
	Through	1,237	1,084	87.6%	3.7	A
	Right Turn					
	Subtotal	1,259	1,160	92.2%	3.7	A
Total		2,709	2,200	81.2%	109.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	604	592	97.9%	38.0	D
	Right Turn	15	12	82.7%	12.6	B
	Subtotal	619	604	97.6%	37.6	D
SB	Left Turn	72	76	105.1%	62.8	E
	Through	836	770	92.1%	29.2	C
	Right Turn	174	172	99.0%	42.6	D
	Subtotal	1,082	1,018	94.0%	34.2	C
EB	Left Turn	441	286	64.8%	107.2	F
	Through	94	58	61.3%	133.9	F
	Right Turn	110	71	64.9%	141.2	F
	Subtotal	645	415	64.3%	116.1	F
WB	Left Turn	141	141	99.7%	21.1	C
	Through	62	58	93.9%	20.0	C
	Right Turn	97	99	101.9%	34.7	C
	Subtotal	300	298	99.2%	25.3	C
Total		2,646	2,334	88.2%	48.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 20 Broadway/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1,038	1,014	97.6%	12.2	B
	Through					
	Right Turn					
	Subtotal	1,038	1,014	97.6%	12.2	B
SB	Left Turn	508	488	96.1%	15.0	B
	Through					
	Right Turn					
	Subtotal	508	488	96.1%	15.0	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	205	176	85.9%	26.8	C
	Through					
	Right Turn					
	Subtotal	855	734	85.9%	15.5	B
Total		2,401	2,236	93.1%	13.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 21 Spring/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	451	359	79.5%	21.9	C
	Right Turn	103	94	90.8%	3.8	A
	Subtotal	554	452	81.6%	18.1	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	213	230	107.9%	24.4	C
	Through	752	641	85.2%	28.2	C
	Right Turn					
	Subtotal	965	871	90.2%	27.2	C
Total		1,519	1,323	87.1%	24.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 22 Main/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	274	210	76.6%	22.6	C
	Through	1,324	994	75.0%	22.5	C
	Right Turn					
	Subtotal	1,598	1,204	75.3%	22.6	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	691	662	95.7%	7.6	A
	Right Turn	93	79	85.1%	6.6	A
	Subtotal	784	741	94.5%	7.5	A
Total		2,382	1,944	81.6%	17.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	190	118	62.3%	12.1	B
	Through	1,079	673	62.4%	20.0	C
	Right Turn					
	Subtotal	1,269	792	62.4%	18.9	B
SB	Left Turn					
	Through	155	156	100.9%	14.9	B
	Right Turn	39	36	91.3%	16.8	B
	Subtotal	194	192	99.0%	15.4	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	104	103	98.6%	59.0	E
	Through	555	587	105.8%	60.8	E
	Right Turn	53	51	95.8%	70.9	E
	Subtotal	712	740	104.0%	61.2	E
Total		2,175	1,724	79.3%	36.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	22	24	110.0%	9.5	A
	Through	508	498	98.0%	4.3	A
	Right Turn	1,217	1,077	88.5%	6.0	A
	Subtotal	1,747	1,599	91.6%	5.5	A
SB	Left Turn	169	151	89.4%	34.0	C
	Through	676	588	86.9%	17.8	B
	Right Turn	30	40	132.3%	15.0	B
	Subtotal	875	778	89.0%	20.9	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	253	242	95.6%	124.2	F
	Through	660	679	102.8%	165.1	F
	Right Turn	276	265	96.0%	203.6	F
	Subtotal	1,189	1,186	99.7%	165.7	F
Total		3,811	3,563	93.5%	63.0	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	102	102	100.1%	39.1	D
	Through	393	382	97.3%	36.0	D
	Right Turn	79	81	102.3%	4.8	A
	Subtotal	574	565	98.4%	31.8	C
SB	Left Turn	520	524	100.7%	50.5	D
	Through	287	324	112.9%	32.0	C
	Right Turn	284	222	78.3%	31.8	C
	Subtotal	1,091	1,070	98.1%	40.7	D
EB	Left Turn	297	300	100.8%	89.9	F
	Through					
	Right Turn					
	Subtotal	297	300	100.8%	89.9	F
WB	Left Turn	204	200	97.8%	101.1	F
	Through	156	180	115.4%	121.8	F
	Right Turn	507	469	92.4%	134.6	F
	Subtotal	867	848	97.8%	123.9	F
Total		2,829	2,783	98.4%	67.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 26

Broadway/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	890	866	97.3%	56.3	E
	Right Turn	230	212	92.2%	45.0	D
	Subtotal	1,120	1,078	96.3%	54.0	D
SB	Left Turn	102	95	93.1%	86.2	F
	Through	611	570	93.2%	10.0	B
	Right Turn					
	Subtotal	713	665	93.2%	22.3	C
EB	Left Turn	148	148	100.1%	45.9	D
	Through	418	423	101.2%	33.5	C
	Right Turn	46	54	117.8%	7.2	A
	Subtotal	612	625	102.2%	34.9	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,445	2,368	96.9%	40.1	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 27

Spring/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	113	97	86.0%	11.2	B
	Through	551	588	106.7%	15.4	B
	Right Turn					
	Subtotal	664	685	103.2%	14.8	B
EB	Left Turn					
	Through	668	651	97.4%	20.0	C
	Right Turn	82	77	94.0%	12.6	B
	Subtotal	750	728	97.0%	19.2	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,414	1,413	99.9%	17.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,504	1,108	73.6%	30.1	C
	Right Turn	270	195	72.3%	40.2	D
	Subtotal	1,774	1,303	73.4%	31.6	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	94	92	97.9%	63.5	E
	Through	687	683	99.4%	57.8	E
	Right Turn					
	Subtotal	781	775	99.2%	58.5	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,555	2,077	81.3%	41.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,188	719	60.5%	110.2	F
	Right Turn	204	231	113.2%	83.7	F
	Subtotal	1,570	949	60.5%	104.0	F
SB	Left Turn					
	Through	259	259	100.0%	6.4	A
	Right Turn					
	Subtotal	259	259	100.0%	6.4	A
EB	Left Turn	586	583	99.5%	90.8	F
	Through	266	275	103.5%	41.7	D
	Right Turn	24	20	81.3%	36.2	D
	Subtotal	957	878	91.7%	74.4	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,786	2,086	74.9%	77.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,210	1,111	91.8%	34.5	C
	Right Turn	127	119	93.5%	12.4	B
	Subtotal	1,337	1,229	92.0%	32.4	C
SB	Left Turn	167	153	91.8%	76.3	E
	Through	762	677	88.8%	9.9	A
	Right Turn					
	Subtotal	929	830	89.3%	22.3	C
EB	Left Turn	366	318	86.9%	35.5	D
	Through	47	41	86.8%	18.9	B
	Right Turn	31	22	71.6%	4.7	A
	Subtotal	444	381	85.9%	32.4	C
WB	Left Turn	93	91	97.4%	93.2	F
	Through					
	Right Turn	171	171	99.9%	220.7	F
	Subtotal	264	262	99.1%	181.6	F
Total		2,974	2,702	90.9%	45.1	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 31 US 101 Ramps/Commercial Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	37	102.8%	28.9	C
	Through	435	438	100.6%	33.3	C
	Right Turn	25	24	96.8%	22.3	C
	Subtotal	496	499	100.5%	32.6	C
SB	Left Turn	130	139	107.2%	37.5	D
	Through	25	23	90.4%	45.9	D
	Right Turn	181	182	100.6%	5.8	A
	Subtotal	336	344	102.4%	21.4	C
EB	Left Turn	321	299	93.0%	34.1	C
	Through	66	63	95.9%	24.9	C
	Right Turn	11	10	87.3%	5.7	A
	Subtotal	398	371	93.3%	32.0	C
WB	Left Turn	1	1	110.0%	15.2	B
	Through	45	46	102.2%	49.8	D
	Right Turn	345	350	101.4%	30.6	C
	Subtotal	391	397	101.5%	32.7	C
Total		1,621	1,611	99.4%	30.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 32 Broadway/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	21	103.0%	65.1	E
	Through	808	823	101.9%	59.1	E
	Right Turn	72	68	94.9%	146.5	F
	Subtotal	900	912	101.4%	65.8	E
SB	Left Turn	45	43	94.4%	53.6	D
	Through	567	529	93.3%	4.6	A
	Right Turn	45	50	111.6%	6.0	A
	Subtotal	657	622	94.7%	8.4	A
EB	Left Turn	69	59	86.1%	255.3	F
	Through	765	618	80.8%	289.4	F
	Right Turn	21	13	63.3%	245.0	F
	Subtotal	855	691	80.8%	286.4	F
WB	Left Turn	97	75	77.4%	28.8	C
	Through	763	661	86.6%	15.3	B
	Right Turn	243	199	81.9%	16.7	B
	Subtotal	1,103	935	84.8%	16.8	B
Total		3,515	3,160	89.9%	83.1	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 33 Spring/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	58	50	86.0%	136.6	F
	Through	466	520	111.5%	50.5	D
	Right Turn	109	97	88.9%	35.2	D
	Subtotal	633	666	105.3%	55.3	E
EB	Left Turn					
	Through	820	668	81.5%	120.7	F
	Right Turn	62	51	82.9%	79.3	E
	Subtotal	882	719	81.6%	117.8	F
WB	Left Turn	49	46	94.3%	8.4	A
	Through	994	845	85.0%	6.5	A
	Right Turn					
	Subtotal	1,043	891	85.4%	6.6	A
Total		2,558	2,277	89.0%	53.1	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	278	200	71.9%	303.5	F
	Through	1,483	1,053	71.0%	377.5	F
	Right Turn	136	97	71.1%	389.1	F
	Subtotal	1,897	1,350	71.1%	367.6	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	90	73	80.9%	70.2	E
	Through	788	641	81.3%	125.6	F
	Right Turn					
	Subtotal	878	713	81.3%	119.8	F
WB	Left Turn					
	Through	765	687	89.7%	14.3	B
	Right Turn	201	159	78.9%	24.9	C
	Subtotal	966	845	87.5%	16.2	B
Total		3,741	2,908	77.7%	200.3	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 35

Los Angeles/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	172	88	51.3%	213.8	F
	Through	1,165	593	50.9%	251.3	F
	Right Turn	82	45	54.3%	188.7	F
	Subtotal	1,419	726	51.2%	243.0	F
SB	Left Turn	97	95	98.4%	39.2	D
	Through	388	384	98.9%	32.9	C
	Right Turn	342	344	100.4%	42.0	D
	Subtotal	827	823	99.5%	37.9	D
EB	Left Turn	134	110	82.0%	251.4	F
	Through	674	538	79.8%	29.4	C
	Right Turn	116	90	77.8%	28.3	C
	Subtotal	924	738	79.9%	62.9	E
WB	Left Turn	71	65	91.8%	65.4	E
	Through	452	414	91.6%	80.7	F
	Right Turn	271	246	90.9%	167.7	F
	Subtotal	794	726	91.4%	109.3	F
Total		3,964	3,013	76.0%	107.8	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 36

San Pedro/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	166	157	94.3%	87.4	F
	Through					
	Right Turn	223	243	109.0%	52.3	D
	Subtotal	389	400	102.7%	66.5	E
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	822	656	79.8%	21.6	C
	Right Turn	31	22	71.9%	21.5	C
	Subtotal	853	679	79.5%	21.6	C
WB	Left Turn	39	50	128.5%	32.8	C
	Through	628	579	92.2%	94.1	F
	Right Turn					
	Subtotal	667	629	94.3%	89.6	F
Total		1,909	1,707	89.4%	56.8	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 37

Alameda/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	142	133	93.4%	27.4	C
	Through	968	889	91.8%	29.9	C
	Right Turn					
	Subtotal	1,110	1,022	92.0%	29.6	C
SB	Left Turn	47	36	76.8%	38.4	D
	Through	663	527	79.5%	30.2	C
	Right Turn	275	217	78.8%	47.4	D
	Subtotal	985	780	79.2%	35.1	D
EB	Left Turn	235	207	87.9%	26.9	C
	Through	576	502	87.2%	24.6	C
	Right Turn	234	188	80.4%	64.0	E
	Subtotal	1,045	897	85.8%	33.4	C
WB	Left Turn	32	32	98.8%	67.4	E
	Through	250	272	108.6%	66.2	E
	Right Turn	134	134	99.7%	64.8	E
	Subtotal	416	437	105.0%	66.0	E
Total		3,556	3,135	88.2%	37.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	18	48.9%	333.7	F
	Through	1,244	596	47.9%	445.5	F
	Right Turn	62	30	48.9%	428.8	F
	Subtotal	1,342	644	48.0%	441.5	F
SB	Left Turn	44	38	85.9%	25.8	C
	Through	510	483	94.7%	16.1	B
	Right Turn	21	19	91.9%	5.8	A
	Subtotal	575	540	93.9%	16.2	B
EB	Left Turn	62	34	55.0%	60.2	E
	Through	854	698	81.7%	95.2	F
	Right Turn	51	40	77.5%	59.5	E
	Subtotal	967	771	79.7%	91.9	F
WB	Left Turn	15	12	80.7%	40.0	D
	Through	504	499	98.9%	30.5	C
	Right Turn	113	103	91.5%	59.0	E
	Subtotal	632	614	97.2%	35.2	D
Total		3,516	2,569	73.1%	146.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	19	188.0%	36.7	D
	Through	302	300	99.3%	36.5	D
	Right Turn	44	46	104.3%	30.6	C
	Subtotal	356	365	102.4%	36.0	D
SB	Left Turn	15	12	78.0%	28.1	C
	Through	40	32	79.0%	24.0	C
	Right Turn	15	30	196.7%	43.3	D
	Subtotal	70	73	104.0%	32.6	C
EB	Left Turn	15	29	194.0%	17.2	B
	Through	926	748	80.8%	33.8	C
	Right Turn	19	12	64.2%	3.5	A
	Subtotal	960	790	82.3%	32.7	C
WB	Left Turn	31	29	92.9%	27.4	C
	Through	607	576	94.9%	15.8	B
	Right Turn	72	72	100.6%	13.1	B
	Subtotal	710	677	95.4%	16.0	B
Total		2,096	1,904	90.8%	27.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	149	96.8%	32.7	C
	Through					
	Right Turn	22	22	98.6%	21.1	C
	Subtotal	176	171	97.0%	31.2	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	970	813	83.8%	54.2	D
	Right Turn	15	11	73.3%	28.8	C
	Subtotal	985	824	83.6%	53.8	D
WB	Left Turn	16	15	93.8%	15.4	B
	Through	556	546	98.2%	7.4	A
	Right Turn					
	Subtotal	572	561	98.1%	7.6	A
Total		1,733	1,556	89.8%	34.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Project
PM Peak Hour

Intersection 41 Alameda/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	73	97.5%	36.4	D
	Through	637	625	98.1%	26.3	C
	Right Turn	122	120	98.4%	10.7	B
	Subtotal	834	818	98.1%	25.0	C
SB	Left Turn	35	30	86.3%	38.1	D
	Through	743	660	88.8%	20.5	C
	Right Turn	151	130	85.8%	16.6	B
	Subtotal	929	819	88.2%	21.1	C
EB	Left Turn	396	325	82.2%	24.2	C
	Through	486	420	86.4%	13.4	B
	Right Turn	110	90	81.5%	13.6	B
	Subtotal	992	835	84.2%	17.5	B
WB	Left Turn					
	Through	346	359	103.8%	19.8	B
	Right Turn	77	75	97.8%	13.2	B
	Subtotal	423	434	102.7%	18.5	B
Total		3,178	2,907	91.5%	20.7	C

AM ALTERNATIVE 3

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	10	90.9%	6.8	A
	Through	284	310	109.0%	5.7	A
	Right Turn	21	22	106.7%	6.5	A
	Subtotal	316	342	108.2%	5.9	A
SB	Left Turn	26	26	98.1%	14.4	B
	Through	743	773	104.0%	10.3	B
	Right Turn	10	9	94.0%	9.1	A
	Subtotal	779	808	103.7%	10.4	B
EB	Left Turn	1	1	70.0%	6.8	A
	Through	150	153	102.3%	22.7	C
	Right Turn	1	1	130.0%	5.0	A
	Subtotal	152	155	102.2%	22.6	C
WB	Left Turn	52	47	91.2%	31.1	C
	Through	785	751	95.7%	29.8	C
	Right Turn	41	38	92.4%	25.1	C
	Subtotal	878	836	95.2%	29.7	C
Total		2,125	2,142	100.8%	18.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	39	34	87.9%	14.2	B
	Through	351	328	93.5%	6.6	A
	Right Turn	42	51	122.1%	5.9	A
	Subtotal	432	414	95.8%	7.0	A
SB	Left Turn	98	96	98.1%	19.0	B
	Through	1,267	1,282	101.2%	19.4	B
	Right Turn	204	200	97.8%	22.9	C
	Subtotal	1,569	1,578	100.6%	19.8	B
EB	Left Turn	21	23	108.1%	50.5	D
	Through	149	152	101.8%	31.2	C
	Right Turn	27	25	94.1%	26.5	C
	Subtotal	197	200	101.4%	32.9	C
WB	Left Turn	177	176	99.3%	40.4	D
	Through	635	602	94.8%	43.3	D
	Right Turn	83	81	97.2%	39.6	D
	Subtotal	895	858	95.9%	42.3	D
Total		3,093	3,050	98.6%	25.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	24	21	86.7%	60.4	E
	Right Turn					
	Subtotal	24	21	86.7%	60.4	E
SB	Left Turn					
	Through	21	19	89.5%	34.9	C
	Right Turn					
	Subtotal	21	19	89.5%	34.9	C
EB	Left Turn	21	20	93.8%	34.0	C
	Through	248	257	103.7%	14.0	B
	Right Turn	15	15	96.7%	16.3	B
	Subtotal	284	291	102.6%	16.0	B
WB	Left Turn	10	11	113.0%	13.4	B
	Through	957	918	95.9%	20.4	C
	Right Turn	84	77	91.1%	14.7	B
	Subtotal	1,051	1,006	95.7%	20.0	B
Total		1,380	1,337	96.9%	19.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	57	99.0%	31.8	C
	Through	380	388	102.2%	11.8	B
	Right Turn	12	12	97.5%	1.8	A
	Subtotal	450	457	101.6%	14.3	B
SB	Left Turn	171	167	97.8%	55.3	E
	Through	1,069	1,061	99.2%	76.0	E
	Right Turn	240	220	91.5%	303.9	F
	Subtotal	1,480	1,447	97.8%	108.5	F
EB	Left Turn	61	71	116.2%	33.0	C
	Through	122	122	99.6%	6.6	A
	Right Turn	65	64	98.6%	12.2	B
	Subtotal	248	257	103.4%	15.4	B
WB	Left Turn	49	47	96.1%	62.6	E
	Through	753	730	96.9%	28.2	C
	Right Turn	164	158	96.0%	5.3	A
	Subtotal	966	935	96.7%	26.5	C
Total		3,144	3,096	98.5%	61.4	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	80.0%	10.9	B
	Through	200	158	79.2%	17.7	B
	Right Turn	42	33	79.0%	8.5	A
	Subtotal	243	192	79.1%	16.4	B
SB	Left Turn	227	229	101.0%	19.4	B
	Through	493	493	99.9%	22.3	C
	Right Turn	544	540	99.2%	17.3	B
	Subtotal	1,264	1,262	99.8%	19.7	B
EB	Left Turn	68	69	100.7%	35.5	D
	Through	232	229	98.6%	18.2	B
	Right Turn	5	5	104.0%	17.8	B
	Subtotal	305	303	99.2%	22.7	C
WB	Left Turn					
	Through	421	394	93.5%	39.7	D
	Right Turn	185	177	95.5%	33.9	C
	Subtotal	606	570	94.1%	38.0	D
Total		2,418	2,327	96.2%	24.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 6 **Vignes/Bauchet** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	20	102.0%	7.9	A
	Through	609	559	91.8%	9.6	A
	Right Turn	164	152	92.4%	6.3	A
	Subtotal	793	731	92.2%	8.9	A
SB	Left Turn	61	57	94.1%	14.1	B
	Through	450	440	97.9%	10.5	B
	Right Turn	12	12	100.8%	4.6	A
	Subtotal	523	510	97.5%	10.7	B
EB	Left Turn	4	3	77.5%	14.1	B
	Through	4	3	62.5%	7.3	A
	Right Turn	6	6	101.7%	3.9	A
	Subtotal	14	12	83.6%	14.3	B
WB	Left Turn	123	125	101.9%	22.3	C
	Through	4	4	97.5%	18.1	B
	Right Turn	27	28	103.0%	5.3	A
	Subtotal	154	157	101.9%	19.3	B
Total		1,484	1,410	95.0%	10.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	208	219	105.1%	102.2	F
	Through	393	418	106.3%	27.8	C
	Right Turn	118	119	100.8%	6.9	A
	Subtotal	719	755	105.0%	46.8	D
SB	Left Turn	158	143	90.3%	43.8	D
	Through	418	393	94.1%	30.8	C
	Right Turn	33	33	100.3%	20.8	C
	Subtotal	609	569	93.4%	33.5	C
EB	Left Turn	57	58	101.1%	32.8	C
	Through	463	477	103.1%	31.5	C
	Right Turn	272	288	106.0%	17.5	B
	Subtotal	792	823	104.0%	26.7	C
WB	Left Turn	309	273	88.3%	25.2	C
	Through	1,264	1,085	85.8%	45.7	D
	Right Turn	339	285	84.2%	8.0	A
	Subtotal	1,912	1,643	85.9%	35.9	D
Total		4,032	3,791	94.0%	35.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	6	7	121.7%	74.0	E
	Through					
	Right Turn	8	8	100.0%	5.3	A
	Subtotal	14	15	109.3%	42.4	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	721	720	99.8%	1.5	A
	Right Turn	18	20	109.4%	5.7	A
	Subtotal	739	739	100.0%	1.7	A
WB	Left Turn	6	6	100.0%	76.0	E
	Through	1,902	1,615	84.9%	169.8	F
	Right Turn	32	25	77.2%	128.9	F
	Subtotal	1,940	1,646	84.8%	169.1	F
Total		2,693	2,400	89.1%	113.7	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	265	248	93.5%	149.1	F
	Through	501	501	99.9%	21.6	C
	Right Turn	90	89	99.2%	3.1	A
	Subtotal	856	838	97.9%	54.1	D
SB	Left Turn	26	20	76.5%	161.6	F
	Through	1,021	832	81.5%	165.9	F
	Right Turn	738	606	82.2%	379.8	F
	Subtotal	1,785	1,458	81.7%	261.7	F
EB	Left Turn	286	298	104.1%	57.4	E
	Through	265	263	99.1%	57.5	E
	Right Turn	178	166	93.4%	32.9	C
	Subtotal	729	727	99.7%	51.8	D
WB	Left Turn	305	272	89.2%	255.0	F
	Through	937	838	89.4%	271.3	F
	Right Turn	8	7	85.0%	276.0	F
	Subtotal	1,250	1,117	89.3%	267.2	F
Total		4,620	4,139	89.6%	178.6	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 10

Alameda/Hambra

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	9	83.6%	14.7	B
	Through	435	445	102.3%	6.8	A
	Right Turn					
	Subtotal	446	454	101.8%	7.0	A
SB	Left Turn					
	Through	1,180	1,145	97.0%	54.5	D
	Right Turn	3	3	90.0%	17.5	B
	Subtotal	1,183	1,147	97.0%	54.4	D
EB	Left Turn					
	Through					
	Right Turn	10	10	102.0%	9.8	A
	Subtotal	10	10	102.0%	9.8	A
WB	Left Turn	467	460	98.4%	111.1	F
	Through	16	15	93.1%	114.6	F
	Right Turn	15	12	82.7%	92.6	F
	Subtotal	498	487	97.8%	111.1	F
Total		2,137	2,099	98.2%	57.0	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	15	98.7%	11.0	B
	Through	276	302	109.3%	9.4	A
	Right Turn	22	23	102.7%	6.6	A
	Subtotal	313	339	108.3%	9.5	A
SB	Left Turn	42	46	110.0%	8.9	A
	Through	739	762	103.1%	9.2	A
	Right Turn	15	15	98.7%	11.0	B
	Subtotal	796	823	103.4%	9.3	A
EB	Left Turn	10	9	88.0%	18.1	B
	Through	76	73	96.4%	24.5	C
	Right Turn	10	10	99.0%	26.1	C
	Subtotal	96	92	95.8%	24.2	C
WB	Left Turn	46	45	97.0%	29.6	C
	Through	257	245	95.1%	28.2	C
	Right Turn	30	31	102.0%	8.8	A
	Subtotal	333	320	96.0%	26.7	C
Total		1,538	1,574	102.3%	13.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 12 Broadway/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	63	89.0%	38.6	D
	Through	385	358	93.0%	5.7	A
	Right Turn	74	71	95.3%	11.9	B
	Subtotal	530	492	92.8%	11.1	B
SB	Left Turn	83	105	126.9%	23.7	C
	Through	1,244	1,243	99.9%	19.1	B
	Right Turn	144	137	94.8%	24.3	C
	Subtotal	1,471	1,485	100.9%	19.9	B
EB	Left Turn	9	10	106.7%	38.7	D
	Through	90	92	102.3%	35.1	D
	Right Turn	41	41	99.5%	24.4	C
	Subtotal	140	143	101.8%	32.3	C
WB	Left Turn	64	48	75.3%	56.9	E
	Through	118	96	81.4%	54.6	D
	Right Turn	38	39	103.7%	42.1	D
	Subtotal	220	184	83.5%	52.3	D
Total		2,361	2,303	97.5%	21.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	535	495	92.5%	1.5	A
	Right Turn	45	40	88.9%	2.1	A
	Subtotal	580	535	92.2%	1.5	A
SB	Left Turn	34	33	97.1%	12.1	B
	Through	1,466	1,396	95.2%	27.5	C
	Right Turn					
	Subtotal	1,500	1,429	95.3%	27.1	C
EB	Left Turn	204	203	99.6%	42.3	D
	Through	47	42	90.0%	37.8	D
	Right Turn	16	21	130.6%	39.1	D
	Subtotal	267	266	99.8%	41.2	D
WB	Left Turn	21	18	83.3%	51.0	D
	Through					
	Right Turn	8	8	98.8%	6.5	A
	Subtotal	29	25	87.6%	33.1	C
Total		2,376	2,256	94.9%	22.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	128	122	95.3%	34.1	C
	Through	337	310	91.9%	24.0	C
	Right Turn	123	117	95.0%	21.0	C
	Subtotal	588	549	93.3%	25.7	C
SB	Left Turn	136	136	99.7%	62.4	E
	Through	840	825	98.2%	48.8	D
	Right Turn	373	367	98.4%	35.0	D
	Subtotal	1,349	1,328	98.4%	46.3	D
EB	Left Turn	139	140	100.6%	41.5	D
	Through	767	779	101.6%	23.2	C
	Right Turn	112	108	96.8%	13.0	B
	Subtotal	1,018	1,027	100.9%	25.1	C
WB	Left Turn	139	126	90.6%	15.4	B
	Through	1,435	1,242	86.5%	12.8	B
	Right Turn	54	42	77.4%	4.2	A
	Subtotal	1,628	1,409	86.6%	12.8	B
Total		4,583	4,313	94.1%	27.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	3	4	133.3%	71.1	E
	Through	349	338	96.8%	109.0	F
	Right Turn	170	158	93.0%	100.7	F
	Subtotal	522	500	95.7%	106.3	F
EB	Left Turn					
	Through	714	724	101.5%	9.3	A
	Right Turn	312	323	103.4%	4.7	A
	Subtotal	1,026	1,047	102.1%	7.9	A
WB	Left Turn	233	235	100.9%	54.0	D
	Through	1,458	1,211	83.1%	51.6	D
	Right Turn	17	13	78.2%	17.2	B
	Subtotal	1,708	1,460	85.5%	51.7	D
Total		3,256	3,007	92.3%	45.9	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 16		Main/Cesar Chavez			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	146	134	91.9%	49.7	D
	Through	183	176	96.3%	56.2	E
	Right Turn	107	108	101.3%	80.0	F
	Subtotal	436	419	96.1%	59.7	E
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	70	72	103.1%	34.3	C
	Through	647	681	105.3%	7.9	A
	Right Turn					
	Subtotal	717	753	105.0%	10.4	B
WB	Left Turn					
	Through	1,546	1,301	84.2%	16.7	B
	Right Turn	14	18	130.0%	5.4	A
	Subtotal	1,560	1,319	84.6%	16.6	B
Total		2,713	2,491	91.8%	22.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	144	138	95.8%	163.8	F
	Through	483	455	94.1%	38.4	D
	Right Turn	212	210	98.9%	43.0	D
	Subtotal	839	802	95.6%	63.2	E
SB	Left Turn	99	101	101.7%	27.3	C
	Through	1,214	1,145	94.3%	38.7	D
	Right Turn	190	181	95.4%	8.7	A
	Subtotal	1,503	1,427	94.9%	34.2	C
EB	Left Turn	78	75	96.2%	20.7	C
	Through	549	595	108.4%	11.4	B
	Right Turn	127	128	101.0%	5.1	A
	Subtotal	754	798	105.9%	11.3	B
WB	Left Turn	164	142	86.8%	32.0	C
	Through	1,226	1,023	83.5%	64.3	E
	Right Turn	19	16	81.6%	43.8	D
	Subtotal	1,409	1,181	83.8%	60.3	E
Total		4,505	4,208	93.4%	42.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 18 Union Station Driveway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	14	3	24.3%	21.6	C
	Through					
	Right Turn	15	4	28.0%	13.0	B
	Subtotal	29	8	26.2%	22.9	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	777	819	105.5%	1.1	A
	Right Turn	83	83	100.1%	1.7	A
	Subtotal	860	903	104.9%	1.2	A
WB	Left Turn	75	61	80.9%	135.7	F
	Through	1,430	1,226	85.7%	173.9	F
	Right Turn					
	Subtotal	1,505	1,287	85.5%	172.2	F
Total		2,394	2,197	91.8%	99.5	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	797	752	94.4%	44.9	D
	Right Turn	27	22	81.1%	48.3	D
	Subtotal	824	774	94.0%	44.7	D
SB	Left Turn	61	68	110.8%	63.5	E
	Through	1,115	1,045	93.8%	24.4	C
	Right Turn	329	303	92.1%	31.3	C
	Subtotal	1,505	1,416	94.1%	27.8	C
EB	Left Turn					
	Through	56	49	86.8%	71.3	E
	Right Turn	20	18	91.0%	72.3	E
	Subtotal	76	67	87.9%	71.1	E
WB	Left Turn	99	92	92.9%	22.0	C
	Through	60	57	94.7%	23.8	C
	Right Turn	42	45	107.4%	35.5	D
	Subtotal	201	194	96.5%	26.0	C
Total		2,606	2,451	94.1%	34.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 20 **Broadway/Arcadia** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	466	497	106.7%	12.2	B
	Through					
	Right Turn					
	Subtotal	466	497	106.7%	12.2	B
SB	Left Turn	762	734	96.4%	15.1	B
	Through					
	Right Turn					
	Subtotal	762	734	96.4%	15.1	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	365	297	81.4%	24.1	C
	Through					
	Right Turn					
	Subtotal	1,194	985	82.5%	16.1	B
Total		2,422	2,217	91.5%	14.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 21

Spring/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	877	721	82.2%	28.3	C
	Right Turn	35	30	86.3%	9.3	A
	Subtotal	912	751	82.3%	27.6	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	529	484	91.6%	17.7	B
	Through	1,159	957	82.6%	16.7	B
	Right Turn					
	Subtotal	1,688	1,441	85.4%	17.0	B
Total		2,600	2,192	84.3%	20.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	80	84	105.1%	1.4	A
	Through	355	362	102.1%	4.5	A
	Right Turn					
	Subtotal	435	446	102.6%	3.9	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	1,608	1,358	84.5%	4.2	A
	Right Turn	81	66	81.1%	5.8	A
	Subtotal	1,689	1,424	84.3%	4.2	A
Total		2,124	1,870	88.1%	4.1	A

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 23 **Los Angeles/Arcadia** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	88	83	94.3%	11.0	B
	Through	165	175	105.9%	6.4	A
	Right Turn					
	Subtotal	253	258	101.9%	8.0	A
SB	Left Turn					
	Through	347	322	92.8%	19.3	B
	Right Turn	38	34	88.7%	21.0	C
	Subtotal	385	356	92.4%	19.4	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	360	272	75.7%	11.6	B
	Through	1,563	1,306	83.5%	7.3	A
	Right Turn	71	55	77.7%	17.7	B
	Subtotal	1,994	1,633	81.9%	8.4	A
Total		2,632	2,247	85.4%	10.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 24 Alameda/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	143	143	100.2%	30.3	C
	Through	949	924	97.4%	20.0	C
	Right Turn	50	87	174.4%	13.5	B
	Subtotal	1,142	1,154	101.1%	20.8	C
SB	Left Turn	13	37	283.8%	18.1	B
	Through	939	829	88.3%	14.1	B
	Right Turn	69	69	99.6%	10.3	B
	Subtotal	1,021	935	91.6%	14.0	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	484	376	77.6%	142.5	F
	Through	1,782	1,423	79.8%	132.8	F
	Right Turn	261	206	79.0%	149.2	F
	Subtotal	2,527	2,004	79.3%	136.5	F
Total		4,690	4,094	87.3%	75.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	93	91	98.1%	42.2	D
	Through	208	206	99.2%	26.5	C
	Right Turn	101	103	101.8%	6.3	A
	Subtotal	402	400	99.6%	24.3	C
SB	Left Turn	591	545	92.3%	65.7	E
	Through	275	260	94.4%	34.9	C
	Right Turn	353	261	74.0%	38.4	D
	Subtotal	1,219	1,066	87.4%	51.7	D
EB	Left Turn	235	277	118.0%	59.5	E
	Through					
	Right Turn					
	Subtotal	235	277	118.0%	59.5	E
WB	Left Turn	109	110	101.0%	35.5	D
	Through	149	171	115.0%	77.0	E
	Right Turn	373	376	100.8%	12.5	B
	Subtotal	631	658	104.2%	33.8	C
Total		2,487	2,401	96.5%	43.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	331	363	109.6%	9.9	A
	Right Turn	83	85	102.9%	3.9	A
	Subtotal	414	448	108.3%	8.9	A
SB	Left Turn	144	134	92.9%	11.6	B
	Through	983	893	90.8%	8.0	A
	Right Turn					
	Subtotal	1,127	1,026	91.1%	8.4	A
EB	Left Turn	135	136	100.9%	24.2	C
	Through	279	277	99.4%	21.0	C
	Right Turn	163	172	105.3%	10.5	B
	Subtotal	577	585	101.4%	18.7	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,118	2,060	97.2%	11.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	171	151	88.4%	1.2	A
	Through	1,235	1,207	97.7%	4.9	A
	Right Turn					
	Subtotal	1,406	1,358	96.6%	4.5	A
EB	Left Turn					
	Through	309	301	97.5%	32.5	C
	Right Turn	197	192	97.6%	17.6	B
	Subtotal	506	494	97.6%	27.0	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,912	1,852	96.9%	10.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	388	404	104.0%	25.9	C
	Right Turn	217	215	98.8%	22.1	C
	Subtotal	605	618	102.2%	24.8	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	47	43	91.7%	8.5	A
	Through	433	445	102.7%	14.6	B
	Right Turn					
	Subtotal	480	488	101.6%	14.1	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,085	1,106	101.9%	20.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	234	239	102.1%	18.4	B
	Right Turn	85	148	173.8%	20.3	C
	Subtotal	379	387	102.0%	19.2	B
SB	Left Turn					
	Through	707	592	83.8%	11.7	B
	Right Turn					
	Subtotal	707	592	83.8%	11.7	B
EB	Left Turn	252	263	104.2%	25.8	C
	Through	222	249	112.3%	34.5	C
	Right Turn	157	148	94.1%	32.7	C
	Subtotal	650	659	101.4%	30.4	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,736	1,639	94.4%	21.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	877	860	98.1%	72.0	E
	Right Turn	158	167	105.9%	20.7	C
	Subtotal	1,035	1,028	99.3%	64.0	E
SB	Left Turn	200	165	82.5%	30.2	C
	Through	1,223	1,045	85.4%	15.3	B
	Right Turn					
	Subtotal	1,423	1,210	85.0%	17.3	B
EB	Left Turn	59	97	164.9%	30.0	C
	Through	66	70	105.8%	26.9	C
	Right Turn	157	149	94.6%	9.3	A
	Subtotal	282	316	111.9%	19.4	B
WB	Left Turn	149	141	94.7%	20.0	B
	Through					
	Right Turn	206	198	96.3%	31.8	C
	Subtotal	355	340	95.6%	27.5	C
Total		3,095	2,893	93.5%	34.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 31

US 101 Ramps/Commercial

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	13	11	86.9%	38.2	D
	Through	43	39	90.7%	33.4	C
	Right Turn	7	7	100.0%	9.3	A
	Subtotal	63	57	91.0%	30.1	C
SB	Left Turn	218	232	106.2%	31.8	C
	Through	63	65	103.3%	30.7	C
	Right Turn	200	196	97.9%	4.8	A
	Subtotal	481	492	102.4%	21.4	C
EB	Left Turn	271	256	94.5%	25.4	C
	Through	77	77	99.7%	21.2	C
	Right Turn	26	23	86.5%	8.7	A
	Subtotal	374	355	95.0%	23.4	C
WB	Left Turn	10	9	91.0%	30.0	C
	Through	122	113	92.2%	34.3	C
	Right Turn	176	172	97.8%	18.9	B
	Subtotal	308	294	95.4%	25.6	C
Total		1,226	1,199	97.8%	23.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 32 Broadway/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	130.0%	18.4	B
	Through	363	397	109.4%	8.7	A
	Right Turn					
	Subtotal	364	399	109.5%	8.9	A
SB	Left Turn	55	49	89.5%	6.6	A
	Through	1,028	954	92.8%	7.3	A
	Right Turn	63	68	107.5%	8.8	A
	Subtotal	1,146	1,071	93.4%	7.4	A
EB	Left Turn	25	26	102.8%	26.6	C
	Through	585	607	103.8%	20.1	C
	Right Turn	154	147	95.5%	16.9	B
	Subtotal	764	780	102.1%	19.8	B
WB	Left Turn	79	69	86.7%	21.7	C
	Through	973	921	94.6%	10.1	B
	Right Turn	26	25	94.2%	7.3	A
	Subtotal	1,078	1,014	94.0%	10.9	B
Total		3,352	3,263	97.3%	11.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 33

Spring/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	59	51	86.6%	22.3	C
	Through	1,172	1,165	99.4%	21.3	C
	Right Turn	201	185	91.9%	24.7	C
	Subtotal	1,432	1,401	97.8%	21.8	C
EB	Left Turn					
	Through	499	525	105.2%	23.8	C
	Right Turn	141	140	99.3%	32.2	C
	Subtotal	640	665	103.9%	25.5	C
WB	Left Turn	113	114	100.5%	16.1	B
	Through	877	854	97.3%	16.0	B
	Right Turn					
	Subtotal	990	967	97.7%	16.0	B
Total		3,062	3,033	99.0%	20.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	120	122	101.5%	19.5	B
	Through	457	477	104.3%	19.3	B
	Right Turn	174	180	103.3%	16.9	B
	Subtotal	751	778	103.6%	18.9	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	60	59	98.2%	11.2	B
	Through	498	515	103.4%	18.1	B
	Right Turn					
	Subtotal	558	574	102.9%	17.5	B
WB	Left Turn					
	Through	870	840	96.5%	14.0	B
	Right Turn	88	83	94.8%	13.7	B
	Subtotal	958	923	96.3%	14.0	B
Total		2,267	2,218	97.8%	21.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 35

Los Angeles/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	75	99.7%	31.3	C
	Through	231	231	100.0%	14.3	B
	Right Turn	60	65	107.8%	15.6	B
	Subtotal	366	370	101.2%	17.8	B
SB	Left Turn	175	153	87.4%	32.9	C
	Through	872	782	89.7%	27.0	C
	Right Turn	86	80	93.0%	31.1	C
	Subtotal	1,133	1,015	89.6%	28.1	C
EB	Left Turn	31	46	149.0%	75.3	E
	Through	400	418	104.5%	23.8	C
	Right Turn	241	228	94.5%	23.5	C
	Subtotal	672	692	103.0%	27.5	C
WB	Left Turn	109	101	92.9%	44.9	D
	Through	797	767	96.2%	64.0	E
	Right Turn	117	109	93.4%	64.2	E
	Subtotal	1,023	978	95.6%	62.0	E
Total		3,194	3,055	95.6%	37.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 36

San Pedro/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	76	78	102.9%	27.1	C
	Through					
	Right Turn	42	53	125.0%	16.3	B
	Subtotal	118	131	110.8%	22.7	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	369	378	102.4%	10.2	B
	Right Turn	266	254	95.6%	13.5	B
	Subtotal	635	632	99.5%	11.5	B
WB	Left Turn	149	158	106.2%	17.9	B
	Through	947	901	95.1%	19.5	B
	Right Turn					
	Subtotal	1,096	1,059	96.6%	19.4	B
Total		1,849	1,822	98.5%	17.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	240	244	101.8%	37.8	D
	Through	871	864	99.2%	49.4	D
	Right Turn					
	Subtotal	1,111	1,108	99.7%	46.7	D
SB	Left Turn	67	57	84.8%	43.0	D
	Through	970	851	87.7%	31.8	C
	Right Turn	492	428	87.0%	12.6	B
	Subtotal	1,529	1,336	87.3%	26.0	C
EB	Left Turn	95	96	101.4%	21.3	C
	Through	186	207	111.4%	22.9	C
	Right Turn	130	126	96.6%	37.4	D
	Subtotal	411	429	104.4%	26.9	C
WB	Left Turn	28	27	95.4%	75.3	E
	Through	364	394	108.2%	77.6	E
	Right Turn	69	71	103.0%	85.7	F
	Subtotal	461	492	106.6%	78.5	E
Total		3,512	3,364	95.8%	40.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	346	339	98.0%	15.1	B
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	1,222	1,112	91.0%	18.0	B
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	616	647	105.0%	13.9	B
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	843	831	98.6%	14.0	B
	Through					
	Right Turn					
	Subtotal					
Total		3,027	2,929	96.8%	15.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	23	152.0%	35.9	D
	Through	98	100	102.3%	19.6	B
	Right Turn	21	20	92.9%	6.2	A
	Subtotal	134	143	106.4%	20.8	C
SB	Left Turn	15	13	84.0%	24.1	C
	Through	379	365	96.4%	21.5	C
	Right Turn	21	36	171.4%	34.3	C
	Subtotal	415	414	99.7%	22.7	C
EB	Left Turn	10	22	224.0%	30.7	C
	Through	539	540	100.2%	6.8	A
	Right Turn	15	16	103.3%	4.4	A
	Subtotal	564	578	102.5%	7.7	A
WB	Left Turn	33	30	90.0%	27.5	C
	Through	807	786	97.4%	20.1	C
	Right Turn	10	8	83.0%	9.9	A
	Subtotal	850	824	96.9%	20.3	C
Total		1,963	1,958	99.8%	17.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	147	95.5%	22.4	C
	Through					
	Right Turn	12	12	100.8%	5.8	A
	Subtotal	166	159	95.8%	21.1	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	472	489	103.6%	18.0	B
	Right Turn	103	104	101.2%	12.7	B
	Subtotal	575	593	103.1%	17.1	B
WB	Left Turn	26	23	86.9%	16.1	B
	Through	696	696	100.0%	9.6	A
	Right Turn					
	Subtotal	722	719	99.5%	9.8	A
Total		1,463	1,471	100.5%	14.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
AM Peak Hour

Intersection 41 Alameda/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	4	4	102.5%	20.0	B
	Through	1,053	1,056	100.3%	39.3	D
	Right Turn	50	53	105.2%	19.1	B
	Subtotal	1,107	1,113	100.5%	38.4	D
SB	Left Turn	24	22	92.1%	40.0	D
	Through	913	810	88.7%	13.9	B
	Right Turn	191	168	87.9%	17.2	B
	Subtotal	1,128	1,000	88.6%	15.0	B
EB	Left Turn	31	30	96.8%	17.4	B
	Through	402	422	105.0%	12.5	B
	Right Turn	51	50	98.6%	11.4	B
	Subtotal	484	502	103.8%	12.7	B
WB	Left Turn					
	Through	527	544	103.1%	28.1	C
	Right Turn	27	29	106.3%	17.0	B
	Subtotal	554	572	103.3%	27.5	C
Total		3,273	3,187	97.4%	25.1	C

PM ALTERNATIVE 3

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	32	33	101.6%	19.0	B
	Through	665	691	103.9%	16.8	B
	Right Turn	67	70	104.2%	15.3	B
	Subtotal	764	794	103.9%	16.8	B
SB	Left Turn	15	14	91.3%	7.7	A
	Through	435	461	106.0%	9.3	A
	Right Turn	26	25	97.7%	9.9	A
	Subtotal	476	500	105.0%	9.4	A
EB	Left Turn	47	47	100.0%	23.0	C
	Through	293	294	100.2%	17.5	B
	Right Turn	16	15	93.1%	10.3	B
	Subtotal	356	356	99.9%	17.8	B
WB	Left Turn	32	29	90.6%	32.0	C
	Through	340	313	91.9%	29.9	C
	Right Turn	82	75	91.3%	23.1	C
	Subtotal	454	416	91.7%	28.8	C
Total		2,050	2,065	100.8%	17.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 2 Broadway/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	47	81.7%	19.5	B
	Through	1,180	1,087	92.1%	21.4	C
	Right Turn	100	100	100.4%	23.4	C
	Subtotal	1,338	1,235	92.3%	21.5	C
SB	Left Turn	55	55	99.6%	21.2	C
	Through	649	691	106.5%	13.0	B
	Right Turn	48	48	100.0%	11.4	B
	Subtotal	752	794	105.6%	13.4	B
EB	Left Turn	79	81	102.9%	20.9	C
	Through	254	257	101.2%	9.1	A
	Right Turn	42	41	97.1%	6.3	A
	Subtotal	375	379	101.1%	11.6	B
WB	Left Turn	52	59	113.3%	29.6	C
	Through	348	324	93.2%	27.8	C
	Right Turn	254	244	96.2%	28.4	C
	Subtotal	654	627	95.9%	28.3	C
Total		3,119	3,036	97.3%	19.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	7	5	72.9%	28.8	C
	Through					
	Right Turn	102	72	70.9%	64.1	E
	Subtotal	109	77	71.0%	62.0	E
SB	Left Turn	17	17	98.2%	35.1	D
	Through	29	28	96.6%	41.0	D
	Right Turn	8	9	116.3%	20.8	C
	Subtotal	54	54	100.0%	37.4	D
EB	Left Turn	10	12	115.0%	20.9	C
	Through	390	389	99.8%	19.8	B
	Right Turn	15	13	84.7%	19.5	B
	Subtotal	415	413	99.6%	19.7	B
WB	Left Turn	7	6	82.9%	21.5	C
	Through	646	609	94.3%	11.5	B
	Right Turn	13	11	86.9%	8.0	A
	Subtotal	666	627	94.1%	11.6	B
Total		1,244	1,171	94.1%	18.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 4

Alameda/Alpine

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	179	164	91.5%	16.9	B
	Through	1,066	1,007	94.5%	12.3	B
	Right Turn	49	49	100.8%	11.8	B
	Subtotal	1,294	1,221	94.3%	13.0	B
SB	Left Turn	116	116	100.2%	50.3	D
	Through	500	509	101.7%	13.4	B
	Right Turn	57	68	118.9%	9.7	A
	Subtotal	673	693	102.9%	19.1	B
EB	Left Turn	102	105	102.7%	16.7	B
	Through	335	324	96.8%	20.9	C
	Right Turn	72	70	97.8%	7.8	A
	Subtotal	509	500	98.1%	18.0	B
WB	Left Turn	55	51	93.3%	26.4	C
	Through	430	394	91.7%	20.6	C
	Right Turn	393	367	93.3%	11.3	B
	Subtotal	878	812	92.5%	16.8	B
Total		3,354	3,225	96.1%	16.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	5	4	74.0%	30.5	C
	Through	657	525	79.9%	25.0	C
	Right Turn	35	28	79.4%	22.0	C
	Subtotal	697	556	79.8%	25.0	C
SB	Left Turn	201	201	100.0%	35.1	D
	Through	275	272	98.8%	21.7	C
	Right Turn	186	186	99.8%	13.5	B
	Subtotal	662	658	99.4%	23.3	C
EB	Left Turn	228	224	98.2%	67.3	E
	Through	271	264	97.3%	21.1	C
	Right Turn	1	1	110.0%	3.5	A
	Subtotal	500	489	97.7%	42.2	D
WB	Left Turn					
	Through	687	621	90.4%	37.4	D
	Right Turn	370	340	91.8%	46.0	D
	Subtotal	1,057	961	90.9%	40.5	D
Total		2,916	2,664	91.4%	33.7	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	31	27	86.8%	14.9	B
	Through	980	866	88.4%	13.3	B
	Right Turn	57	52	90.4%	6.4	A
	Subtotal	1,068	945	88.5%	13.0	B
SB	Left Turn	27	27	100.4%	18.4	B
	Through	463	449	97.0%	9.5	A
	Right Turn	5	5	92.0%	1.8	A
	Subtotal	495	481	97.1%	10.0	A
EB	Left Turn	11	12	110.9%	12.5	B
	Through	5	6	110.0%	8.9	A
	Right Turn	20	21	104.5%	5.6	A
	Subtotal	36	39	107.2%	8.6	A
WB	Left Turn	263	256	97.5%	21.9	C
	Through	6	7	108.3%	13.1	B
	Right Turn	81	76	94.3%	6.3	A
	Subtotal	350	339	96.9%	18.1	B
Total		1,949	1,803	92.5%	13.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	319	274	85.8%	217.8	F
	Through	719	669	93.1%	52.8	D
	Right Turn	208	196	94.3%	20.4	C
	Subtotal	1,246	1,139	91.4%	84.7	F
SB	Left Turn	296	269	91.0%	43.1	D
	Through	426	395	92.8%	37.1	D
	Right Turn	62	55	89.0%	29.2	C
	Subtotal	784	720	91.8%	38.9	D
EB	Left Turn	45	42	94.2%	40.1	D
	Through	948	877	92.5%	47.0	D
	Right Turn	299	298	99.6%	24.4	C
	Subtotal	1,292	1,217	94.2%	41.5	D
WB	Left Turn	198	189	95.2%	44.2	D
	Through	878	761	86.7%	76.1	E
	Right Turn	304	260	85.7%	6.4	A
	Subtotal	1,380	1,210	87.7%	56.7	E
Total		4,702	4,286	91.1%	55.9	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	3	3	100.0%	28.2	C
	Through					
	Right Turn	4	4	102.5%	2.7	A
	Subtotal	7	7	101.4%	15.5	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,450	1,341	92.5%	1.7	A
	Right Turn	2	2	110.0%	3.1	A
	Subtotal	1,452	1,343	92.5%	1.7	A
WB	Left Turn	14	0	0.0%	0.0	A
	Through	1,377	1,196	86.8%	254.8	F
	Right Turn	7	0	0.0%	0.0	A
	Subtotal	1,398	1,196	85.5%	249.6	F
Total		2,857	2,546	89.1%	108.0	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 9

Mission/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	348	239	68.7%	879.3	F
	Through	581	472	81.2%	87.0	F
	Right Turn	83	70	84.7%	66.2	E
	Subtotal	1,012	781	77.2%	350.0	F
SB	Left Turn	46	45	98.3%	41.6	D
	Through	476	474	99.7%	47.5	D
	Right Turn	366	387	105.8%	105.8	F
	Subtotal	888	907	102.1%	70.7	E
EB	Left Turn	445	427	95.9%	44.7	D
	Through	663	603	90.9%	47.1	D
	Right Turn	346	308	89.0%	37.9	D
	Subtotal	1,454	1,338	92.0%	44.2	D
WB	Left Turn	172	163	94.7%	105.4	F
	Through	684	659	96.4%	131.6	F
	Right Turn	27	25	94.1%	127.1	F
	Subtotal	883	848	96.0%	126.0	F
Total		4,237	3,873	91.4%	107.8	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 10 Alameda/Hambra Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1,279	1,205	94.2%	11.3	B
	Through					
	Right Turn					
	Subtotal	1,279	1,205	94.2%	11.3	B
SB	Left Turn	622	623	100.1%	3.7	A
	Through					
	Right Turn					
	Subtotal	627	628	100.1%	3.7	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	260	258	99.3%	44.7	D
	Through					
	Right Turn					
	Subtotal	276	274	99.2%	44.2	D
Total		2,182	2,107	96.5%	13.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 11		Hill/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	21	22	105.2%	17.5	B
	Through	655	676	103.2%	13.9	B
	Right Turn	64	66	102.3%	13.3	B
	Subtotal	740	764	103.2%	13.9	B
SB	Left Turn	51	50	97.8%	22.0	C
	Through	411	427	103.9%	9.4	A
	Right Turn	21	23	107.1%	10.8	B
	Subtotal	483	499	103.4%	10.8	B
EB	Left Turn	15	18	118.0%	19.8	B
	Through	213	212	99.7%	21.7	C
	Right Turn	31	33	107.1%	18.6	B
	Subtotal	259	263	101.7%	21.1	C
WB	Left Turn	30	28	94.3%	15.3	B
	Through	185	180	97.2%	15.6	B
	Right Turn	94	91	96.4%	5.0	A
	Subtotal	309	299	96.7%	12.8	B
Total		1,791	1,825	101.9%	13.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 12 Broadway/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	119	114	95.5%	36.0	D
	Through	1,086	982	90.4%	23.0	C
	Right Turn	65	60	91.5%	40.3	D
	Subtotal	1,270	1,155	90.9%	25.3	C
SB	Left Turn	61	86	141.3%	53.3	D
	Through	636	652	102.5%	14.3	B
	Right Turn	46	48	104.3%	18.3	B
	Subtotal	743	786	105.8%	19.1	B
EB	Left Turn	121	120	99.5%	26.4	C
	Through	124	119	96.0%	35.7	D
	Right Turn	83	84	101.0%	20.4	C
	Subtotal	328	323	98.5%	28.3	C
WB	Left Turn	39	28	71.8%	87.6	F
	Through	144	107	74.2%	44.7	D
	Right Turn	131	107	81.3%	48.5	D
	Subtotal	314	241	76.9%	49.2	D
Total		2,655	2,505	94.4%	25.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	946	876	92.6%	9.3	A
	Right Turn	13	13	99.2%	6.1	A
	Subtotal	959	889	92.7%	9.2	A
SB	Left Turn	16	15	93.8%	32.1	C
	Through	882	864	98.0%	35.5	D
	Right Turn					
	Subtotal	898	879	97.9%	35.4	D
EB	Left Turn	1,057	913	86.4%	36.5	D
	Through	23	19	84.3%	30.8	C
	Right Turn	37	34	92.4%	27.0	C
	Subtotal	1,117	967	86.5%	36.1	D
WB	Left Turn	42	36	84.5%	49.0	D
	Through					
	Right Turn	73	71	96.8%	10.9	B
	Subtotal	115	106	92.3%	24.0	C
Total		3,089	2,841	92.0%	26.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	192	185	96.1%	43.2	D
	Through	901	856	95.0%	48.4	D
	Right Turn	182	172	94.4%	91.7	F
	Subtotal	1,275	1,212	95.1%	54.7	D
SB	Left Turn	112	109	97.5%	121.3	F
	Through	443	443	99.9%	26.7	C
	Right Turn	203	206	101.6%	11.6	B
	Subtotal	758	758	100.0%	37.3	D
EB	Left Turn	210	176	83.7%	217.8	F
	Through	1,055	699	66.3%	220.2	F
	Right Turn	64	53	82.2%	119.8	F
	Subtotal	1,329	928	69.8%	214.7	F
WB	Left Turn	139	116	83.5%	54.5	D
	Through	1,203	983	81.7%	18.8	B
	Right Turn	159	132	83.2%	7.4	A
	Subtotal	1,501	1,232	82.1%	21.1	C
Total		4,863	4,129	84.9%	74.4	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	30	28	91.7%	52.0	D
	Through	99	97	97.9%	45.4	D
	Right Turn	72	69	95.7%	33.7	C
	Subtotal	201	193	96.2%	42.1	D
EB	Left Turn					
	Through	1,126	987	87.7%	19.5	B
	Right Turn	223	205	91.7%	4.9	A
	Subtotal	1,349	1,192	88.3%	17.0	B
WB	Left Turn	179	182	101.9%	61.0	E
	Through	1,429	1,140	79.7%	53.6	D
	Right Turn	100	79	79.4%	19.3	B
	Subtotal	1,708	1,401	82.0%	52.6	D
Total		3,258	2,786	85.5%	36.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	427	328	76.9%	148.9	F
	Through	989	848	85.8%	213.0	F
	Right Turn	278	248	89.4%	206.4	F
	Subtotal	1,694	1,425	84.1%	196.1	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	105	94	89.5%	97.7	F
	Through	1,051	935	89.0%	59.2	E
	Right Turn					
	Subtotal	1,156	1,029	89.0%	62.8	E
WB	Left Turn					
	Through	1,296	1,034	79.8%	31.4	C
	Right Turn	23	21	92.6%	13.3	B
	Subtotal	1,319	1,056	80.0%	31.0	C
Total		4,169	3,510	84.2%	109.1	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	113	106	93.5%	223.9	F
	Through	693	676	97.5%	46.3	D
	Right Turn	181	190	104.9%	48.8	D
	Subtotal	987	972	98.4%	64.7	E
SB	Left Turn	100	104	103.9%	26.7	C
	Through	699	669	95.7%	46.6	D
	Right Turn	162	155	95.9%	16.5	B
	Subtotal	961	928	96.6%	39.5	D
EB	Left Turn	150	131	87.3%	94.9	F
	Through	969	883	91.1%	19.2	B
	Right Turn	210	182	86.7%	5.1	A
	Subtotal	1,329	1,196	90.0%	26.0	C
WB	Left Turn	173	139	80.2%	45.4	D
	Through	1,044	817	78.2%	79.5	E
	Right Turn	116	83	71.9%	59.0	E
	Subtotal	1,333	1,039	77.9%	73.4	E
Total		4,610	4,134	89.7%	49.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 18 Union Station Driveway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	3	3.8%	8.8	A
	Through					
	Right Turn	129	5	3.6%	46.1	D
	Subtotal	200	7	3.7%	46.9	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,163	1,010	86.8%	246.3	F
	Right Turn	87	19	21.7%	214.8	F
	Subtotal	1,250	1,028	82.3%	245.6	F
WB	Left Turn	22	80	363.2%	2.3	A
	Through	1,237	1,094	88.5%	2.5	A
	Right Turn					
	Subtotal	1,259	1,174	93.3%	2.5	A
Total		2,709	2,210	81.6%	105.8	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	890	862	96.8%	31.3	C
	Right Turn	15	13	88.0%	24.9	C
	Subtotal	905	875	96.7%	31.1	C
SB	Left Turn	72	75	104.6%	61.6	E
	Through	836	759	90.8%	17.9	B
	Right Turn	174	153	87.8%	24.5	C
	Subtotal	1,082	987	91.2%	22.7	C
EB	Left Turn					
	Through	94	87	92.2%	39.0	D
	Right Turn	110	108	97.8%	35.8	D
	Subtotal	204	194	95.2%	37.2	D
WB	Left Turn	141	143	101.3%	25.2	C
	Through	62	58	93.4%	21.3	C
	Right Turn	97	102	105.3%	43.1	D
	Subtotal	300	303	101.0%	30.4	C
Total		2,491	2,359	94.7%	27.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1,084	1,073	99.0%	8.7	A
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	508	479	94.4%	16.7	B
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	205	187	91.2%	45.5	D
	Through					
	Right Turn					
	Subtotal					
Total		2,447	2,333	95.3%	17.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 21

Spring/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	451	346	76.7%	43.3	D
	Right Turn	103	90	86.9%	11.5	B
	Subtotal	554	436	78.6%	36.6	D
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	213	245	114.9%	67.6	E
	Through	752	694	92.3%	30.8	C
	Right Turn					
	Subtotal	965	939	97.3%	41.1	D
Total		1,519	1,374	90.5%	39.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	274	261	95.4%	8.7	A
	Through	1,433	1,299	90.6%	13.2	B
	Right Turn					
	Subtotal	1,707	1,560	91.4%	12.3	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	691	683	98.9%	29.5	C
	Right Turn	93	85	91.1%	34.6	C
	Subtotal	784	768	97.9%	30.1	C
Total		2,491	2,328	93.5%	18.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	190	184	96.8%	7.2	A
	Through	638	627	98.2%	5.8	A
	Right Turn					
	Subtotal	828	811	97.9%	6.0	A
SB	Left Turn					
	Through	155	141	91.2%	5.9	A
	Right Turn	39	34	87.7%	9.8	A
	Subtotal	194	176	90.5%	6.8	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	104	91	87.4%	39.5	D
	Through	555	558	100.6%	39.8	D
	Right Turn	53	49	93.0%	41.9	D
	Subtotal	712	698	98.1%	39.9	D
Total		1,734	1,685	97.2%	19.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	22	31	140.5%	4.5	A
	Through	794	792	99.7%	5.3	A
	Right Turn	1,217	1,142	93.9%	5.7	A
	Subtotal	2,033	1,965	96.6%	5.6	A
SB	Left Turn	169	156	92.2%	57.6	E
	Through	676	604	89.3%	28.5	C
	Right Turn	30	37	123.0%	14.9	B
	Subtotal	875	796	91.0%	33.8	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	253	229	90.6%	234.9	F
	Through	660	638	96.7%	244.1	F
	Right Turn	276	249	90.2%	297.6	F
	Subtotal	1,189	1,116	93.9%	254.6	F
Total		4,097	3,877	94.6%	86.1	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 25 Vignes/Ramirez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	102	101	99.3%	39.1	D
	Through	393	379	96.3%	53.5	D
	Right Turn	79	82	104.1%	6.7	A
	Subtotal	574	562	97.9%	43.4	D
SB	Left Turn	520	516	99.3%	53.1	D
	Through	287	320	111.6%	33.2	C
	Right Turn	284	221	78.0%	31.6	C
	Subtotal	1,091	1,058	96.9%	42.6	D
EB	Left Turn	297	294	98.9%	99.2	F
	Through					
	Right Turn					
	Subtotal	297	294	98.9%	99.2	F
WB	Left Turn	204	182	89.3%	119.6	F
	Through	156	165	105.8%	166.3	F
	Right Turn	507	455	89.8%	182.5	F
	Subtotal	867	802	92.5%	167.4	F
Total		2,829	2,716	96.0%	79.3	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 26 Broadway/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	936	933	99.7%	21.2	C
	Right Turn	166	155	93.3%	68.7	E
	Subtotal	1,102	1,088	98.8%	27.6	C
SB	Left Turn	102	92	90.0%	76.2	E
	Through	611	572	93.5%	10.1	B
	Right Turn					
	Subtotal	713	663	93.0%	18.5	B
EB	Left Turn	148	141	95.4%	71.3	E
	Through	418	408	97.6%	78.9	E
	Right Turn	46	52	113.9%	30.6	C
	Subtotal	612	602	98.3%	73.0	E
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,427	2,353	97.0%	36.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	113	93	82.5%	106.2	F
	Through	551	588	106.7%	27.2	C
	Right Turn					
	Subtotal	664	681	102.6%	38.3	D
EB	Left Turn					
	Through	604	566	93.6%	102.1	F
	Right Turn	82	76	92.6%	381.5	F
	Subtotal	686	642	93.5%	122.3	F
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,350	1,323	98.0%	78.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,613	1,483	91.9%	79.5	E
	Right Turn	161	143	89.1%	86.4	F
	Subtotal	1,774	1,626	91.7%	80.3	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	94	82	87.6%	87.3	F
	Through	623	557	89.4%	150.4	F
	Right Turn					
	Subtotal	717	639	89.2%	142.7	F
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,491	2,265	90.9%	98.6	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	811	797	98.2%	27.3	C
	Right Turn	313	475	151.6%	58.4	E
	Subtotal	1,302	1,271	97.6%	39.2	D
SB	Left Turn					
	Through	259	233	90.0%	6.8	A
	Right Turn					
	Subtotal	259	233	90.0%	6.8	A
EB	Left Turn	477	435	91.3%	140.7	F
	Through	266	268	100.7%	74.3	E
	Right Turn	24	21	88.8%	74.3	E
	Subtotal	784	724	92.4%	114.3	F
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,345	2,229	95.0%	59.6	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,496	1,433	95.8%	26.7	C
	Right Turn	127	135	106.0%	8.4	A
	Subtotal	1,623	1,567	96.6%	25.2	C
SB	Left Turn	167	150	89.6%	157.5	F
	Through	762	683	89.6%	12.0	B
	Right Turn					
	Subtotal	929	833	89.6%	38.9	D
EB	Left Turn	366	366	99.9%	113.2	F
	Through	47	44	93.8%	42.4	D
	Right Turn	31	30	95.5%	6.5	A
	Subtotal	444	439	98.9%	98.0	F
WB	Left Turn	93	91	97.7%	63.8	E
	Through					
	Right Turn	171	167	97.7%	191.0	F
	Subtotal	264	258	97.7%	142.5	F
Total		3,260	3,097	95.0%	49.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 31 US 101 Ramps/Commercial Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	37	102.2%	31.6	C
	Through	435	431	99.0%	31.8	C
	Right Turn	25	27	107.2%	22.6	C
	Subtotal	496	494	99.7%	31.4	C
SB	Left Turn	130	138	106.0%	44.2	D
	Through	25	24	96.0%	38.3	D
	Right Turn	181	179	99.1%	5.1	A
	Subtotal	336	341	101.5%	22.7	C
EB	Left Turn	321	310	96.5%	41.0	D
	Through	66	65	97.9%	24.1	C
	Right Turn	11	10	88.2%	10.8	B
	Subtotal	398	384	96.5%	37.6	D
WB	Left Turn	1	1	130.0%	5.2	A
	Through	45	46	102.9%	55.1	E
	Right Turn	345	347	100.6%	28.2	C
	Subtotal	391	395	101.0%	31.6	C
Total		1,621	1,614	99.6%	31.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 32 Broadway/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	20	102.0%	37.8	D
	Through	790	816	103.3%	13.6	B
	Right Turn	72	70	96.5%	18.0	B
	Subtotal	882	906	102.8%	14.6	B
SB	Left Turn	45	44	98.4%	13.2	B
	Through	567	529	93.2%	3.7	A
	Right Turn	45	52	114.9%	5.9	A
	Subtotal	657	625	95.1%	4.4	A
EB	Left Turn	69	68	99.1%	71.7	E
	Through	765	779	101.8%	58.9	E
	Right Turn	21	21	99.0%	48.7	D
	Subtotal	855	868	101.5%	59.6	E
WB	Left Turn	97	84	86.8%	66.9	E
	Through	763	728	95.5%	14.0	B
	Right Turn	243	220	90.6%	14.7	B
	Subtotal	1,103	1,033	93.6%	19.0	B
Total		3,497	3,431	98.1%	26.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 33

Spring/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	58	54	93.3%	84.0	F
	Through	466	514	110.4%	53.4	D
	Right Turn	109	97	89.2%	32.6	C
	Subtotal	633	666	105.2%	53.2	D
EB	Left Turn					
	Through	820	830	101.2%	43.1	D
	Right Turn	62	60	96.5%	41.0	D
	Subtotal	882	890	100.9%	43.0	D
WB	Left Turn	49	53	108.2%	9.9	A
	Through	994	949	95.5%	6.3	A
	Right Turn					
	Subtotal	1,043	1,002	96.1%	6.6	A
Total		2,558	2,557	100.0%	31.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	278	270	96.9%	152.7	F
	Through	1,483	1,376	92.8%	203.1	F
	Right Turn	136	129	94.9%	183.1	F
	Subtotal	1,897	1,775	93.6%	193.9	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	90	89	98.6%	67.4	E
	Through	788	793	100.6%	71.6	E
	Right Turn					
	Subtotal	878	882	100.4%	71.6	E
WB	Left Turn					
	Through	765	733	95.8%	28.0	C
	Right Turn	201	189	94.1%	41.5	D
	Subtotal	966	922	95.4%	30.8	C
Total		3,741	3,578	95.6%	119.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 35 Los Angeles/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	172	169	98.2%	67.0	E
	Through	897	871	97.1%	50.2	D
	Right Turn	82	78	95.0%	45.6	D
	Subtotal	1,151	1,118	97.1%	52.5	D
SB	Left Turn	97	92	94.5%	33.3	C
	Through	388	374	96.4%	29.4	C
	Right Turn	342	324	94.6%	63.7	E
	Subtotal	827	789	95.4%	43.9	D
EB	Left Turn	134	147	109.4%	60.5	E
	Through	674	666	98.9%	32.6	C
	Right Turn	116	108	92.8%	28.5	C
	Subtotal	924	921	99.6%	36.2	D
WB	Left Turn	71	67	93.7%	42.9	D
	Through	452	435	96.2%	64.4	E
	Right Turn	271	260	95.9%	54.0	D
	Subtotal	794	761	95.8%	59.4	E
Total		3,696	3,588	97.1%	47.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 36

San Pedro/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	166	162	97.8%	40.1	D
	Through					
	Right Turn	223	243	108.9%	37.5	D
	Subtotal	389	405	104.2%	38.6	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	822	811	98.6%	19.3	B
	Right Turn	31	26	83.9%	18.5	B
	Subtotal	853	837	98.1%	19.3	B
WB	Left Turn	39	51	131.3%	18.2	B
	Through	628	612	97.5%	7.6	A
	Right Turn					
	Subtotal	667	664	99.5%	8.6	A
Total		1,909	1,905	99.8%	19.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 37

Alameda/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	142	139	98.2%	26.0	C
	Through	1,254	1,200	95.7%	30.2	C
	Right Turn					
	Subtotal	1,396	1,339	95.9%	29.8	C
SB	Left Turn	47	37	79.6%	34.8	C
	Through	663	538	81.1%	8.7	A
	Right Turn	275	224	81.6%	7.3	A
	Subtotal	985	800	81.2%	9.8	A
EB	Left Turn	235	243	103.2%	43.5	D
	Through	576	582	101.1%	35.2	D
	Right Turn	234	229	97.9%	40.9	D
	Subtotal	1,045	1,054	100.9%	38.4	D
WB	Left Turn	32	31	95.6%	96.4	F
	Through	250	272	108.8%	71.1	E
	Right Turn	134	139	103.9%	84.4	F
	Subtotal	416	442	106.2%	76.8	E
Total		3,842	3,634	94.6%	34.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 38

Los Angeles/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	34	95.3%	40.6	D
	Through	976	977	100.1%	46.6	D
	Right Turn	62	64	103.4%	46.4	D
	Subtotal	1,074	1,075	100.1%	46.5	D
SB	Left Turn	44	36	81.8%	30.7	C
	Through	510	493	96.6%	17.3	B
	Right Turn	21	20	93.8%	4.3	A
	Subtotal	575	548	95.3%	17.9	B
EB	Left Turn	62	35	55.8%	47.6	D
	Through	854	726	85.0%	90.8	F
	Right Turn	51	37	73.3%	59.4	E
	Subtotal	967	798	82.5%	87.4	F
WB	Left Turn	15	14	91.3%	45.5	D
	Through	504	524	103.9%	22.3	C
	Right Turn	113	108	95.9%	9.6	A
	Subtotal	632	646	102.2%	20.7	C
Total		3,248	3,067	94.4%	46.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 39 San Pedro/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	20	195.0%	34.8	C
	Through	302	305	100.8%	32.3	C
	Right Turn	44	47	105.7%	30.3	C
	Subtotal	356	371	104.1%	32.5	C
SB	Left Turn	15	13	89.3%	43.4	D
	Through	40	34	85.3%	22.5	C
	Right Turn	15	30	200.7%	42.8	D
	Subtotal	70	78	110.9%	34.4	C
EB	Left Turn	15	30	199.3%	23.0	C
	Through	926	798	86.2%	33.4	C
	Right Turn	19	16	85.3%	5.0	A
	Subtotal	960	844	87.9%	32.5	C
WB	Left Turn	31	30	96.5%	20.2	C
	Through	607	599	98.6%	10.1	B
	Right Turn	72	71	99.0%	8.9	A
	Subtotal	710	700	98.6%	10.4	B
Total		2,096	1,992	95.1%	24.6	C

Vissim Post-Processor
 Average Results from 10 Runs
 Volume and Delay by Movement

Union Station Master Plan
 Alternative 3
 PM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	150	97.4%	36.9	D
	Through					
	Right Turn	22	23	105.0%	49.0	D
	Subtotal	176	173	98.4%	38.5	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	970	860	88.7%	53.1	D
	Right Turn	15	13	89.3%	37.9	D
	Subtotal	985	874	88.7%	52.9	D
WB	Left Turn	16	14	88.8%	15.5	B
	Through	556	565	101.5%	3.6	A
	Right Turn					
	Subtotal	572	579	101.2%	3.9	A
Total		1,733	1,626	93.8%	34.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 3
PM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	77	102.7%	29.4	C
	Through	923	926	100.3%	22.1	C
	Right Turn	122	120	98.1%	10.2	B
	Subtotal	1,120	1,123	100.2%	21.4	C
SB	Left Turn	35	32	90.9%	37.3	D
	Through	743	698	93.9%	17.3	B
	Right Turn	151	142	93.7%	8.5	A
	Subtotal	929	871	93.7%	16.8	B
EB	Left Turn	396	338	85.3%	38.8	D
	Through	486	451	92.7%	21.4	C
	Right Turn	110	95	86.5%	15.8	B
	Subtotal	992	883	89.1%	27.6	C
WB	Left Turn					
	Through	346	361	104.3%	34.1	C
	Right Turn	77	76	98.8%	10.6	B
	Subtotal	423	437	103.3%	30.1	C
Total		3,464	3,314	95.7%	22.9	C

AM ALTERNATIVE 2

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	10	94.5%	9.5	A
	Through	284	306	107.7%	6.5	A
	Right Turn	21	21	99.0%	5.3	A
	Subtotal	316	337	106.6%	6.5	A
SB	Left Turn	26	27	102.7%	14.0	B
	Through	743	777	104.6%	10.9	B
	Right Turn	10	10	95.0%	9.3	A
	Subtotal	779	813	104.4%	10.9	B
EB	Left Turn	1	1	80.0%	14.6	B
	Through	150	154	102.5%	22.7	C
	Right Turn	1	1	130.0%	4.1	A
	Subtotal	152	156	102.6%	22.9	C
WB	Left Turn	52	48	91.7%	31.8	C
	Through	785	744	94.8%	28.7	C
	Right Turn	41	35	84.6%	25.6	C
	Subtotal	878	827	94.1%	28.7	C
Total		2,125	2,133	100.4%	18.0	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 2		Broadway/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	39	32	83.1%	13.0	B
	Through	351	306	87.1%	6.1	A
	Right Turn	42	47	112.1%	6.5	A
	Subtotal	432	385	89.2%	6.8	A
SB	Left Turn	98	95	96.4%	22.9	C
	Through	1,267	1,280	101.0%	24.0	C
	Right Turn	204	197	96.8%	26.8	C
	Subtotal	1,569	1,572	100.2%	24.3	C
EB	Left Turn	21	23	109.5%	51.0	D
	Through	149	152	101.7%	30.9	C
	Right Turn	27	26	94.4%	21.1	C
	Subtotal	197	200	101.5%	31.9	C
WB	Left Turn	177	177	100.2%	42.0	D
	Through	635	597	94.0%	41.8	D
	Right Turn	83	81	97.1%	42.3	D
	Subtotal	895	855	95.6%	42.0	D
Total		3,093	3,013	97.4%	27.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	24	20	82.5%	47.9	D
	Right Turn					
	Subtotal	24	20	82.5%	47.9	D
SB	Left Turn					
	Through	21	20	93.3%	34.7	C
	Right Turn					
	Subtotal	21	20	93.3%	34.7	C
EB	Left Turn	21	21	100.5%	30.0	C
	Through	248	253	102.1%	12.1	B
	Right Turn	15	14	93.3%	12.7	B
	Subtotal	284	288	101.5%	13.3	B
WB	Left Turn	10	11	114.0%	19.2	B
	Through	957	912	95.2%	21.1	C
	Right Turn	84	77	92.0%	18.8	B
	Subtotal	1,051	1,000	95.2%	20.9	C
Total		1,380	1,328	96.2%	20.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	56	97.2%	29.2	C
	Through	380	382	100.6%	12.2	B
	Right Turn	12	11	95.0%	1.2	A
	Subtotal	450	450	100.0%	14.4	B
SB	Left Turn	171	170	99.6%	40.6	D
	Through	1,069	1,065	99.6%	49.1	D
	Right Turn	240	219	91.4%	272.7	F
	Subtotal	1,480	1,455	98.3%	78.9	E
EB	Left Turn	61	69	113.3%	31.1	C
	Through	122	120	98.6%	6.9	A
	Right Turn	65	64	98.2%	10.8	B
	Subtotal	248	253	102.1%	14.6	B
WB	Left Turn	49	49	99.4%	59.2	E
	Through	753	725	96.3%	31.7	C
	Right Turn	164	159	96.8%	6.6	A
	Subtotal	966	933	96.5%	29.0	C
Total		3,144	3,090	98.3%	49.0	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	60.0%	0.0	A
	Through	200	154	77.2%	14.8	B
	Right Turn	42	32	77.1%	9.9	A
	Subtotal	243	187	77.1%	13.9	B
SB	Left Turn	227	229	101.1%	21.4	C
	Through	493	499	101.3%	31.7	C
	Right Turn	544	541	99.5%	25.0	C
	Subtotal	1,264	1,270	100.5%	27.2	C
EB	Left Turn	68	67	98.5%	40.3	D
	Through	232	230	99.1%	20.7	C
	Right Turn	5	5	106.0%	15.9	B
	Subtotal	305	302	99.1%	25.1	C
WB	Left Turn					
	Through	421	392	93.0%	35.8	D
	Right Turn	185	178	96.3%	28.6	C
	Subtotal	606	570	94.0%	33.6	C
Total		2,418	2,329	96.3%	27.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	18	91.5%	9.1	A
	Through	609	558	91.6%	9.6	A
	Right Turn	164	150	91.6%	5.9	A
	Subtotal	793	727	91.6%	8.9	A
SB	Left Turn	61	60	98.9%	12.3	B
	Through	450	441	97.9%	9.1	A
	Right Turn	12	11	92.5%	3.4	A
	Subtotal	523	512	97.9%	9.3	A
EB	Left Turn	4	4	95.0%	13.4	B
	Through	4	2	60.0%	6.3	A
	Right Turn	6	6	93.3%	3.1	A
	Subtotal	14	12	84.3%	14.3	B
WB	Left Turn	123	125	101.3%	23.1	C
	Through	4	4	100.0%	22.3	C
	Right Turn	27	28	104.8%	5.0	A
	Subtotal	154	157	101.9%	19.4	B
Total		1,484	1,407	94.8%	10.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	208	200	96.0%	219.6	F
	Through	393	406	103.3%	38.8	D
	Right Turn	118	117	99.5%	11.7	B
	Subtotal	719	723	100.5%	84.8	F
SB	Left Turn	158	143	90.6%	45.4	D
	Through	418	393	94.0%	28.6	C
	Right Turn	33	32	96.1%	18.5	B
	Subtotal	609	568	93.3%	32.4	C
EB	Left Turn	57	56	97.4%	25.2	C
	Through	463	466	100.6%	31.5	C
	Right Turn	272	287	105.4%	15.8	B
	Subtotal	792	808	102.0%	25.5	C
WB	Left Turn	309	284	91.7%	23.5	C
	Through	1,264	1,112	87.9%	45.0	D
	Right Turn	339	292	86.0%	8.3	A
	Subtotal	1,912	1,687	88.2%	35.4	D
Total		4,032	3,786	93.9%	41.9	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	6	7	118.3%	60.1	E
	Through					
	Right Turn	8	8	103.8%	5.2	A
	Subtotal	14	15	110.0%	33.3	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	721	707	98.0%	1.7	A
	Right Turn	18	19	107.8%	6.7	A
	Subtotal	739	726	98.3%	1.9	A
WB	Left Turn	6	6	100.0%	79.9	E
	Through	1,902	1,658	87.2%	160.4	F
	Right Turn	32	24	75.9%	132.2	F
	Subtotal	1,940	1,688	87.0%	159.7	F
Total		2,693	2,430	90.2%	109.5	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	265	245	92.3%	161.6	F
	Through	501	497	99.2%	21.4	C
	Right Turn	90	92	102.4%	2.9	A
	Subtotal	856	834	97.4%	60.1	E
SB	Left Turn	26	22	85.4%	171.1	F
	Through	1,021	865	84.7%	157.3	F
	Right Turn	738	635	86.0%	344.6	F
	Subtotal	1,785	1,522	85.3%	238.5	F
EB	Left Turn	286	296	103.5%	58.3	E
	Through	265	259	97.8%	56.1	E
	Right Turn	178	164	92.0%	31.6	C
	Subtotal	729	719	98.6%	51.4	D
WB	Left Turn	305	276	90.4%	265.7	F
	Through	937	852	90.9%	275.8	F
	Right Turn	8	6	71.3%	266.6	F
	Subtotal	1,250	1,133	90.7%	273.3	F
Total		4,620	4,209	91.1%	176.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 10

Alameda/Hambra

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	11	11	98.2%	17.2	B
	Through	435	436	100.3%	6.6	A
	Right Turn					
	Subtotal	446	447	100.2%	6.9	A
SB	Left Turn					
	Through	1,180	1,161	98.4%	31.9	C
	Right Turn	3	3	93.3%	8.8	A
	Subtotal	1,183	1,163	98.3%	31.9	C
EB	Left Turn					
	Through					
	Right Turn	10	10	100.0%	10.4	B
	Subtotal	10	10	100.0%	10.4	B
WB	Left Turn	467	470	100.7%	90.6	F
	Through	16	15	92.5%	108.8	F
	Right Turn	15	13	87.3%	85.5	F
	Subtotal	498	498	100.0%	91.3	F
Total		2,137	2,118	99.1%	41.3	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 11 Hill/Ord Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	15	101.3%	12.5	B
	Through	276	299	108.3%	9.4	A
	Right Turn	22	24	109.1%	7.2	A
	Subtotal	313	338	108.0%	9.4	A
SB	Left Turn	42	47	112.1%	7.4	A
	Through	739	766	103.6%	9.6	A
	Right Turn	15	15	101.3%	10.2	B
	Subtotal	796	828	104.0%	9.6	A
EB	Left Turn	10	8	79.0%	23.2	C
	Through	76	76	99.7%	26.4	C
	Right Turn	10	11	111.0%	28.4	C
	Subtotal	96	95	98.8%	26.3	C
WB	Left Turn	46	46	98.9%	30.2	C
	Through	257	240	93.5%	27.5	C
	Right Turn	30	31	103.7%	10.3	B
	Subtotal	333	317	95.2%	26.0	C
Total		1,538	1,578	102.6%	13.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	59	82.8%	30.4	C
	Through	385	327	85.0%	3.8	A
	Right Turn	74	63	84.6%	10.3	B
	Subtotal	530	449	84.7%	8.7	A
SB	Left Turn	83	105	127.0%	27.5	C
	Through	1,244	1,246	100.1%	23.2	C
	Right Turn	144	137	94.9%	28.8	C
	Subtotal	1,471	1,488	101.1%	24.1	C
EB	Left Turn	9	9	104.4%	37.8	D
	Through	90	95	105.6%	31.6	C
	Right Turn	41	43	104.4%	21.3	C
	Subtotal	140	147	105.1%	28.9	C
WB	Left Turn	64	49	76.4%	59.1	E
	Through	118	97	82.4%	61.5	E
	Right Turn	38	40	105.8%	48.4	D
	Subtotal	220	186	84.7%	57.6	E
Total		2,361	2,270	96.1%	24.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 13 **Alameda/Main** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	535	485	90.6%	1.6	A
	Right Turn	45	40	88.7%	2.0	A
	Subtotal	580	525	90.5%	1.6	A
SB	Left Turn	34	33	97.1%	7.8	A
	Through	1,466	1,429	97.5%	23.4	C
	Right Turn					
	Subtotal	1,500	1,462	97.5%	23.1	C
EB	Left Turn	204	201	98.5%	41.3	D
	Through	47	43	91.3%	47.4	D
	Right Turn	16	24	146.9%	52.9	D
	Subtotal	267	267	100.1%	43.6	D
WB	Left Turn	21	17	80.5%	57.8	E
	Through					
	Right Turn	8	8	95.0%	5.4	A
	Subtotal	29	25	84.5%	34.4	C
Total		2,376	2,278	95.9%	21.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	128	107	83.5%	29.6	C
	Through	337	272	80.7%	23.0	C
	Right Turn	123	103	83.9%	18.3	B
	Subtotal	588	482	82.0%	23.5	C
SB	Left Turn	136	137	100.4%	65.4	E
	Through	840	830	98.8%	53.3	D
	Right Turn	373	368	98.6%	40.0	D
	Subtotal	1,349	1,334	98.9%	51.0	D
EB	Left Turn	139	137	98.5%	39.9	D
	Through	767	782	102.0%	24.3	C
	Right Turn	112	110	98.1%	13.5	B
	Subtotal	1,018	1,029	101.1%	25.2	C
WB	Left Turn	139	123	88.7%	14.9	B
	Through	1,435	1,244	86.7%	12.1	B
	Right Turn	54	41	76.1%	4.1	A
	Subtotal	1,628	1,408	86.5%	12.1	B
Total		4,583	4,253	92.8%	29.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	3	3	110.0%	52.8	D
	Through	349	339	97.1%	97.6	F
	Right Turn	170	155	91.3%	92.8	F
	Subtotal	522	498	95.3%	96.1	F
EB	Left Turn					
	Through	714	713	99.9%	10.2	B
	Right Turn	312	324	103.7%	6.0	A
	Subtotal	1,026	1,037	101.0%	8.9	A
WB	Left Turn	332	324	97.7%	50.9	D
	Through	1,458	1,211	83.1%	49.1	D
	Right Turn	17	12	72.4%	16.9	B
	Subtotal	1,807	1,548	85.7%	49.3	D
Total		3,355	3,082	91.9%	43.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	146	135	92.7%	58.9	E
	Through	183	176	96.2%	52.2	D
	Right Turn	107	105	98.3%	67.4	E
	Subtotal	436	417	95.6%	59.1	E
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	70	70	100.6%	27.3	C
	Through	647	669	103.4%	4.9	A
	Right Turn					
	Subtotal	717	739	103.1%	7.0	A
WB	Left Turn					
	Through	1,645	1,390	84.5%	18.6	B
	Right Turn	14	20	144.3%	8.3	A
	Subtotal	1,659	1,410	85.0%	18.4	B
Total		2,812	2,566	91.3%	21.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	144	134	92.8%	253.0	F
	Through	483	446	92.3%	49.9	D
	Right Turn	212	203	95.6%	52.2	D
	Subtotal	839	782	93.2%	86.4	F
SB	Left Turn	99	101	101.8%	30.0	C
	Through	1,115	1,083	97.1%	39.1	D
	Right Turn	289	279	96.4%	15.0	B
	Subtotal	1,503	1,462	97.3%	34.0	C
EB	Left Turn	78	70	90.1%	13.8	B
	Through	549	584	106.3%	8.5	A
	Right Turn	127	130	102.4%	5.2	A
	Subtotal	754	784	104.0%	8.5	A
WB	Left Turn	164	140	85.4%	28.3	C
	Through	1,226	1,021	83.3%	66.1	E
	Right Turn	19	16	81.6%	41.8	D
	Subtotal	1,409	1,177	83.5%	61.6	E
Total		4,505	4,205	93.3%	46.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 18 Union Station Driveway/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	14	4	25.0%	40.0	D
	Through					
	Right Turn	15	5	32.7%	12.5	B
	Subtotal	29	8	29.0%	35.5	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	777	804	103.4%	1.0	A
	Right Turn	83	82	99.0%	1.5	A
	Subtotal	860	886	103.0%	1.1	A
WB	Left Turn	75	61	81.9%	126.2	F
	Through	1,430	1,223	85.6%	176.6	F
	Right Turn					
	Subtotal	1,505	1,285	85.4%	174.4	F
Total		2,394	2,179	91.0%	101.6	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	797	757	94.9%	50.6	D
	Right Turn	83	66	79.9%	42.8	D
	Subtotal	880	823	93.5%	49.9	D
SB	Left Turn	61	73	118.9%	56.8	E
	Through	1,345	1,278	95.0%	10.6	B
	Right Turn					
	Subtotal	1,406	1,350	96.0%	13.1	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	159	150	94.5%	24.5	C
	Through					
	Right Turn	42	45	107.1%	40.1	D
	Subtotal	201	195	97.1%	28.2	C
Total		2,487	2,369	95.2%	26.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	466	359	77.0%	12.5	B
	Right Turn					
	Subtotal	466	359	77.0%	12.5	B
SB	Left Turn					
	Through	762	743	97.6%	13.1	B
	Right Turn					
	Subtotal	762	743	97.6%	13.1	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	365	290	79.4%	24.6	C
	Through					
	Right Turn	829	663	80.0%	9.6	A
	Subtotal	1,194	953	79.8%	14.3	B
Total		2,422	2,055	84.9%	13.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 21

Spring/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	976	812	83.2%	27.4	C
	Right Turn	35	32	91.1%	11.8	B
	Subtotal	1,011	844	83.5%	26.8	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	529	478	90.4%	17.8	B
	Through	1,159	923	79.7%	16.7	B
	Right Turn					
	Subtotal	1,688	1,402	83.0%	17.1	B
Total		2,699	2,245	83.2%	20.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	80	84	105.5%	2.2	A
	Through	355	361	101.7%	5.7	A
	Right Turn					
	Subtotal	435	446	102.4%	5.0	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	1,608	1,314	81.7%	3.8	A
	Right Turn	81	64	79.0%	4.2	A
	Subtotal	1,689	1,378	81.6%	3.8	A
Total		2,124	1,823	85.8%	4.1	A

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	88	87	98.5%	7.3	A
	Through	89	84	94.6%	6.2	A
	Right Turn					
	Subtotal	177	171	96.6%	6.8	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	444	341	76.7%	18.5	B
	Through	1,601	1,289	80.5%	11.0	B
	Right Turn	71	53	74.9%	17.6	B
	Subtotal	2,116	1,683	79.5%	12.9	B
Total		2,293	1,854	80.9%	12.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	143	146	101.9%	40.8	D
	Through	1,005	990	98.5%	25.3	C
	Right Turn	50	83	165.0%	16.8	B
	Subtotal	1,198	1,219	101.7%	26.5	C
SB	Left Turn	13	42	326.2%	26.8	C
	Through	1,083	976	90.2%	19.8	B
	Right Turn	191	178	93.1%	15.1	B
	Subtotal	1,287	1,197	93.0%	19.4	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	484	353	72.9%	161.8	F
	Through	1,782	1,361	76.4%	148.9	F
	Right Turn	261	199	76.4%	169.1	F
	Subtotal	2,527	1,913	75.7%	153.7	F
Total		5,012	4,328	86.3%	79.8	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	93	91	97.5%	40.4	D
	Through	208	207	99.7%	35.7	D
	Right Turn	101	104	102.7%	5.2	A
	Subtotal	402	402	99.9%	28.3	C
SB	Left Turn	591	548	92.6%	56.4	E
	Through	275	260	94.6%	34.4	C
	Right Turn	353	263	74.4%	37.9	D
	Subtotal	1,219	1,070	87.8%	46.3	D
EB	Left Turn	235	268	113.9%	79.6	E
	Through					
	Right Turn					
	Subtotal	235	268	113.9%	79.6	E
WB	Left Turn	109	106	97.4%	51.0	D
	Through	149	169	113.6%	97.4	F
	Right Turn	373	356	95.4%	78.9	E
	Subtotal	631	631	100.0%	76.6	E
Total		2,487	2,371	95.3%	53.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	331	359	108.5%	7.6	A
	Right Turn	83	86	103.5%	3.4	A
	Subtotal	414	445	107.5%	6.8	A
SB	Left Turn	144	133	92.2%	8.8	A
	Through	983	893	90.9%	6.1	A
	Right Turn					
	Subtotal	1,127	1,026	91.0%	6.5	A
EB	Left Turn	135	0	0.0%	0.0	A
	Through	279	336	120.4%	25.3	C
	Right Turn	163	232	142.4%	10.3	B
	Subtotal	577	568	98.4%	15.4	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,118	2,039	96.3%	9.0	A

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	171	148	86.5%	1.0	A
	Through	1,334	1,291	96.7%	5.3	A
	Right Turn					
	Subtotal	1,505	1,438	95.6%	4.9	A
EB	Left Turn					
	Through	309	337	109.0%	33.8	C
	Right Turn	197	212	107.6%	19.1	B
	Subtotal	506	549	108.4%	28.0	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,011	1,987	98.8%	11.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	388	398	102.7%	28.0	C
	Right Turn	217	217	99.8%	20.7	C
	Subtotal	605	615	101.7%	25.6	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	47	47	100.6%	8.7	A
	Through	433	474	109.5%	16.1	B
	Right Turn					
	Subtotal	480	522	108.7%	15.5	B
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,085	1,137	104.8%	21.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	158	152	96.3%	18.5	B
	Right Turn	85	240	281.9%	20.9	C
	Subtotal	379	392	103.4%	19.9	B
SB	Left Turn					
	Through	444	339	76.4%	22.8	C
	Right Turn					
	Subtotal	444	339	76.4%	22.8	C
EB	Left Turn	252	273	108.3%	25.0	C
	Through	222	262	117.9%	32.3	C
	Right Turn	157	157	99.7%	31.5	C
	Subtotal	650	691	106.4%	29.4	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,473	1,422	96.6%	25.3	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 30 Alameda/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	877	851	97.1%	100.6	F
	Right Turn	158	169	107.0%	32.4	C
	Subtotal	1,035	1,020	98.6%	89.2	F
SB	Left Turn	200	172	86.2%	44.7	D
	Through	1,367	1,162	85.0%	16.7	B
	Right Turn					
	Subtotal	1,567	1,334	85.1%	20.3	C
EB	Left Turn	115	172	149.2%	31.2	C
	Through	66	74	112.3%	23.4	C
	Right Turn	177	170	96.0%	8.8	A
	Subtotal	358	416	116.1%	21.1	C
WB	Left Turn	149	138	92.6%	19.5	B
	Through					
	Right Turn	206	198	96.3%	34.4	C
	Subtotal	355	336	94.7%	28.2	C
Total		3,315	3,107	93.7%	43.7	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 31

US 101 Ramps/Commercial

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	13	12	95.4%	34.5	C
	Through	43	41	94.4%	31.6	C
	Right Turn	7	8	112.9%	10.0	A
	Subtotal	63	61	96.7%	28.1	C
SB	Left Turn	218	231	106.0%	32.1	C
	Through	63	64	101.4%	29.6	C
	Right Turn	200	190	95.0%	4.8	A
	Subtotal	481	485	100.8%	21.6	C
EB	Left Turn	271	267	98.5%	24.6	C
	Through	77	79	102.3%	21.8	C
	Right Turn	26	24	90.8%	8.7	A
	Subtotal	374	369	98.7%	23.0	C
WB	Left Turn	10	10	96.0%	21.8	C
	Through	122	115	94.1%	35.0	D
	Right Turn	176	170	96.3%	19.1	B
	Subtotal	308	294	95.4%	25.7	C
Total		1,226	1,209	98.6%	23.4	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 32		Broadway/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	1	1	130.0%	13.0	B
	Through	363	394	108.6%	8.5	A
	Right Turn					
	Subtotal	364	395	108.6%	8.6	A
SB	Left Turn	55	56	101.8%	9.2	A
	Through	1,028	1,005	97.8%	8.9	A
	Right Turn	63	71	112.2%	12.1	B
	Subtotal	1,146	1,132	98.8%	9.1	A
EB	Left Turn	25	25	99.6%	29.9	C
	Through	585	605	103.4%	19.0	B
	Right Turn	154	148	96.0%	15.9	B
	Subtotal	764	777	101.7%	18.8	B
WB	Left Turn	79	67	85.2%	21.6	C
	Through	973	918	94.3%	11.5	B
	Right Turn	26	24	93.1%	9.1	A
	Subtotal	1,078	1,009	93.6%	12.1	B
Total		3,352	3,314	98.9%	12.3	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 33

Spring/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	59	53	90.5%	25.1	C
	Through	1,271	1,266	99.6%	23.2	C
	Right Turn	201	184	91.4%	24.7	C
	Subtotal	1,531	1,503	98.2%	23.5	C
EB	Left Turn					
	Through	499	526	105.3%	23.3	C
	Right Turn	141	144	102.0%	31.6	C
	Subtotal	640	669	104.6%	25.0	C
WB	Left Turn	113	109	96.6%	14.4	B
	Through	877	851	97.1%	16.3	B
	Right Turn					
	Subtotal	990	961	97.0%	16.1	B
Total		3,161	3,133	99.1%	21.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	120	123	102.8%	19.5	B
	Through	457	474	103.7%	18.5	B
	Right Turn	174	179	102.9%	19.0	B
	Subtotal	751	776	103.4%	18.8	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	60	59	98.8%	12.7	B
	Through	498	516	103.6%	19.5	B
	Right Turn					
	Subtotal	558	575	103.1%	18.7	B
WB	Left Turn					
	Through	870	831	95.5%	13.4	B
	Right Turn	88	81	92.4%	11.9	B
	Subtotal	958	912	95.2%	13.3	B
Total		2,267	2,207	97.4%	23.0	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 35

Los Angeles/Temple

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	73	97.1%	22.1	C
	Through	231	235	101.7%	11.6	B
	Right Turn	60	65	107.8%	19.2	B
	Subtotal	366	372	101.7%	15.1	B
SB	Left Turn	175	151	86.0%	29.5	C
	Through	609	544	89.3%	21.9	C
	Right Turn	86	80	93.3%	29.1	C
	Subtotal	870	774	89.0%	24.1	C
EB	Left Turn	31	45	146.5%	65.5	E
	Through	400	422	105.5%	25.0	C
	Right Turn	241	226	93.7%	25.5	C
	Subtotal	672	693	103.2%	27.8	C
WB	Left Turn	109	100	91.9%	39.9	D
	Through	797	760	95.4%	57.7	E
	Right Turn	117	112	95.4%	53.4	D
	Subtotal	1,023	972	95.0%	55.2	E
Total		2,931	2,812	95.9%	34.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 36 San Pedro/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	76	79	103.9%	26.6	C
	Through					
	Right Turn	42	53	126.7%	17.1	B
	Subtotal	118	132	112.0%	22.7	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	369	380	103.1%	9.7	A
	Right Turn	266	255	95.8%	15.7	B
	Subtotal	635	635	100.0%	12.1	B
WB	Left Turn	149	161	108.3%	18.4	B
	Through	947	895	94.5%	15.4	B
	Right Turn					
	Subtotal	1,096	1,056	96.4%	15.9	B
Total		1,849	1,824	98.6%	15.2	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	240	242	100.9%	43.2	D
	Through	871	863	99.1%	57.1	E
	Right Turn					
	Subtotal	1,111	1,105	99.5%	54.1	D
SB	Left Turn	67	60	88.8%	45.8	D
	Through	1,134	985	86.8%	34.8	C
	Right Turn	492	428	86.9%	15.1	B
	Subtotal	1,693	1,472	86.9%	29.5	C
EB	Left Turn	95	100	104.8%	23.8	C
	Through	186	207	111.2%	22.7	C
	Right Turn	130	124	95.4%	32.7	C
	Subtotal	411	431	104.7%	26.1	C
WB	Left Turn	28	27	95.0%	75.6	E
	Through	364	392	107.6%	75.8	E
	Right Turn	69	69	100.6%	84.3	F
	Subtotal	461	488	105.8%	76.9	E
Total		3,676	3,495	95.1%	43.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 38 Los Angeles/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	346	341	98.4%	16.3	B
	Right Turn					
	Subtotal	346	341	98.4%	16.3	B
SB	Left Turn	51	48	93.7%	19.4	B
	Through	754	682	90.5%	17.9	B
	Right Turn	154	140	91.2%	7.7	A
	Subtotal	959	870	90.8%	16.3	B
EB	Left Turn	10	18	176.0%	28.1	C
	Through	513	532	103.8%	14.7	B
	Right Turn	93	95	102.3%	6.7	A
	Subtotal	616	645	104.7%	13.9	B
WB	Left Turn	46	39	85.7%	18.7	B
	Through	787	785	99.7%	12.7	B
	Right Turn	10	10	103.0%	4.0	A
	Subtotal	843	835	99.0%	12.8	B
Total		2,764	2,691	97.3%	14.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	15	24	158.7%	35.3	D
	Through	98	102	104.5%	19.6	B
	Right Turn	21	20	93.3%	6.5	A
	Subtotal	134	146	108.8%	20.8	C
SB	Left Turn	15	13	83.3%	27.3	C
	Through	379	367	96.9%	23.4	C
	Right Turn	21	37	174.3%	34.4	C
	Subtotal	415	416	100.3%	24.5	C
EB	Left Turn	10	22	224.0%	34.2	C
	Through	539	543	100.8%	7.2	A
	Right Turn	15	15	100.7%	3.1	A
	Subtotal	564	581	103.0%	8.0	A
WB	Left Turn	33	31	93.6%	25.9	C
	Through	807	787	97.5%	19.9	B
	Right Turn	10	9	88.0%	9.8	A
	Subtotal	850	826	97.2%	20.0	B
Total		1,963	1,969	100.3%	17.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	148	96.0%	23.5	C
	Through					
	Right Turn	12	13	110.0%	5.7	A
	Subtotal	166	161	97.0%	22.2	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	472	493	104.5%	19.4	B
	Right Turn	103	103	99.9%	13.5	B
	Subtotal	575	596	103.7%	18.3	B
WB	Left Turn	26	21	80.8%	13.0	B
	Through	696	697	100.1%	9.5	A
	Right Turn					
	Subtotal	722	718	99.4%	9.7	A
Total		1,463	1,475	100.8%	14.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
AM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	4	4	100.0%	30.8	C
	Through	1,053	1,056	100.2%	44.8	D
	Right Turn	50	51	101.4%	22.1	C
	Subtotal	1,107	1,110	100.3%	43.6	D
SB	Left Turn	24	20	84.2%	34.5	C
	Through	1,077	949	88.1%	13.9	B
	Right Turn	191	166	86.6%	17.1	B
	Subtotal	1,292	1,134	87.8%	14.7	B
EB	Left Turn	31	30	96.8%	17.4	B
	Through	402	426	106.0%	11.4	B
	Right Turn	51	51	100.8%	12.0	B
	Subtotal	484	508	104.9%	11.9	B
WB	Left Turn					
	Through	527	545	103.4%	26.6	C
	Right Turn	27	27	99.6%	15.3	B
	Subtotal	554	572	103.2%	26.1	C
Total		3,437	3,324	96.7%	26.2	C

PM ALTERNATIVE 2

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 1		Hill/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	32	34	105.3%	20.1	C
	Through	665	683	102.7%	17.2	B
	Right Turn	67	68	101.6%	17.5	B
	Subtotal	764	785	102.7%	17.4	B
SB	Left Turn	15	13	83.3%	17.5	B
	Through	435	462	106.3%	8.7	A
	Right Turn	26	26	98.1%	6.5	A
	Subtotal	476	500	105.1%	8.8	A
EB	Left Turn	47	48	102.1%	20.8	C
	Through	293	295	100.6%	18.1	B
	Right Turn	16	15	93.1%	8.9	A
	Subtotal	356	358	100.4%	18.2	B
WB	Left Turn	32	29	90.0%	32.9	C
	Through	340	311	91.6%	28.4	C
	Right Turn	82	77	93.4%	22.1	C
	Subtotal	454	417	91.8%	27.6	C
Total		2,050	2,059	100.5%	17.6	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 2		Broadway/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	58	51	87.4%	20.1	C
	Through	1,180	1,101	93.3%	21.3	C
	Right Turn	100	101	100.6%	21.8	C
	Subtotal	1,338	1,252	93.6%	21.3	C
SB	Left Turn	55	55	100.4%	24.4	C
	Through	649	686	105.6%	13.2	B
	Right Turn	48	48	99.2%	12.5	B
	Subtotal	752	788	104.8%	14.0	B
EB	Left Turn	79	82	103.4%	21.0	C
	Through	254	257	101.1%	10.4	B
	Right Turn	42	41	96.7%	6.3	A
	Subtotal	375	379	101.1%	12.4	B
WB	Left Turn	52	59	113.7%	24.9	C
	Through	348	322	92.5%	25.0	C
	Right Turn	254	239	94.2%	24.5	C
	Subtotal	654	620	94.8%	24.9	C
Total		3,119	3,039	97.4%	19.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 3 Spring/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	7	7	95.7%	42.7	D
	Through					
	Right Turn	102	74	72.7%	19.7	B
	Subtotal	109	81	74.2%	22.6	C
SB	Left Turn	17	17	100.6%	43.7	D
	Through	29	28	95.9%	36.5	D
	Right Turn	8	7	92.5%	21.1	C
	Subtotal	54	52	96.9%	35.7	D
EB	Left Turn	10	9	94.0%	18.6	B
	Through	390	390	100.0%	18.5	B
	Right Turn	15	15	100.7%	20.7	C
	Subtotal	415	415	99.9%	18.7	B
WB	Left Turn	7	7	92.9%	14.0	B
	Through	646	603	93.4%	11.7	B
	Right Turn	13	12	93.1%	7.0	A
	Subtotal	666	622	93.4%	11.7	B
Total		1,244	1,170	94.0%	16.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 4 Alameda/Alpine Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	179	162	90.7%	16.6	B
	Through	1,066	1,018	95.5%	13.6	B
	Right Turn	49	47	95.5%	9.4	A
	Subtotal	1,294	1,227	94.8%	13.8	B
SB	Left Turn	116	113	97.0%	42.9	D
	Through	500	510	102.0%	13.2	B
	Right Turn	57	67	118.2%	8.1	A
	Subtotal	673	690	102.5%	17.7	B
EB	Left Turn	102	107	105.3%	17.4	B
	Through	335	326	97.4%	17.1	B
	Right Turn	72	69	96.3%	7.7	A
	Subtotal	509	503	98.8%	16.1	B
WB	Left Turn	55	51	92.9%	28.3	C
	Through	430	392	91.2%	20.3	C
	Right Turn	393	369	93.8%	11.6	B
	Subtotal	878	812	92.5%	16.6	B
Total		3,354	3,232	96.4%	15.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 5		Main/Alpine			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	5	4	78.0%	12.5	B
	Through	657	513	78.1%	24.6	C
	Right Turn	35	27	77.1%	22.8	C
	Subtotal	697	544	78.0%	24.5	C
SB	Left Turn	201	200	99.4%	34.6	C
	Through	275	269	98.0%	21.9	C
	Right Turn	186	191	102.5%	14.3	B
	Subtotal	662	660	99.7%	23.7	C
EB	Left Turn	228	226	99.1%	64.6	E
	Through	271	260	95.9%	19.8	B
	Right Turn	1	1	140.0%	5.2	A
	Subtotal	500	487	97.4%	40.9	D
WB	Left Turn					
	Through	687	616	89.7%	36.5	D
	Right Turn	370	323	87.3%	44.7	D
	Subtotal	1,057	939	88.8%	39.4	D
Total		2,916	2,630	90.2%	33.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 6 Vignes/Bauchet Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	31	24	77.4%	13.4	B
	Through	980	850	86.7%	12.6	B
	Right Turn	57	52	90.4%	5.1	A
	Subtotal	1,068	925	86.6%	12.2	B
SB	Left Turn	27	25	93.7%	21.1	C
	Through	463	445	96.1%	9.4	A
	Right Turn	5	5	106.0%	7.3	A
	Subtotal	495	476	96.1%	9.9	A
EB	Left Turn	11	12	105.5%	13.7	B
	Through	5	5	108.0%	18.6	B
	Right Turn	20	22	109.5%	5.5	A
	Subtotal	36	39	108.1%	12.9	B
WB	Left Turn	263	252	95.9%	22.7	C
	Through	6	6	103.3%	12.0	B
	Right Turn	81	80	99.1%	6.4	A
	Subtotal	350	339	96.7%	19.1	B
Total		1,949	1,779	91.3%	12.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 7

Vignes/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	319	280	87.9%	210.2	F
	Through	719	651	90.6%	53.3	D
	Right Turn	208	191	92.0%	19.0	B
	Subtotal	1,246	1,123	90.1%	85.7	F
SB	Left Turn	296	270	91.1%	42.0	D
	Through	426	390	91.6%	34.7	C
	Right Turn	62	56	90.3%	29.2	C
	Subtotal	784	716	91.3%	37.0	D
EB	Left Turn	45	43	94.9%	51.1	D
	Through	948	894	94.3%	55.7	E
	Right Turn	299	295	98.6%	29.6	C
	Subtotal	1,292	1,232	95.3%	49.3	D
WB	Left Turn	198	190	95.9%	42.9	D
	Through	878	772	87.9%	78.0	E
	Right Turn	304	260	85.5%	6.9	A
	Subtotal	1,380	1,222	88.5%	56.6	E
Total		4,702	4,293	91.3%	57.7	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 8 Lyon/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	3	3	103.3%	11.8	B
	Through					
	Right Turn	4	3	72.5%	3.4	A
	Subtotal	7	6	85.7%	15.1	B
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,450	1,355	93.4%	2.0	A
	Right Turn	2	2	95.0%	4.9	A
	Subtotal	1,452	1,357	93.4%	2.0	A
WB	Left Turn	14	0	0.0%	0.0	A
	Through	1,377	1,204	87.4%	280.6	F
	Right Turn	7	0	0.0%	0.0	A
	Subtotal	1,398	1,204	86.1%	280.6	F
Total		2,857	2,567	89.8%	123.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 9 Mission/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	348	242	69.5%	917.8	F
	Through	581	477	82.2%	92.9	F
	Right Turn	83	68	81.7%	56.5	E
	Subtotal	1,012	787	77.8%	382.7	F
SB	Left Turn	46	45	97.8%	42.0	D
	Through	476	477	100.1%	48.5	D
	Right Turn	366	384	104.8%	143.7	F
	Subtotal	888	905	101.9%	87.8	F
EB	Left Turn	445	441	99.1%	42.6	D
	Through	663	602	90.7%	50.8	D
	Right Turn	346	311	89.9%	40.9	D
	Subtotal	1,454	1,354	93.1%	45.9	D
WB	Left Turn	172	162	94.3%	103.4	F
	Through	684	659	96.3%	140.7	F
	Right Turn	27	26	97.0%	133.0	F
	Subtotal	883	847	96.0%	133.1	F
Total		4,237	3,893	91.9%	116.1	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 10 Alameda/Hollywood Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,279	1,215	95.0%	12.0	B
	Right Turn					
	Subtotal	1,279	1,215	95.0%	12.0	B
SB	Left Turn					
	Through	622	625	100.5%	3.4	A
	Right Turn	5	6	110.0%	0.9	A
	Subtotal	627	631	100.6%	3.4	A
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	260	258	99.2%	43.5	D
	Through	1	1	110.0%	12.6	B
	Right Turn	15	13	88.0%	36.9	D
	Subtotal	276	272	98.6%	43.1	D
Total		2,182	2,117	97.0%	13.5	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 11		Hill/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	21	22	103.8%	15.4	B
	Through	655	666	101.7%	12.6	B
	Right Turn	64	68	106.6%	10.5	B
	Subtotal	740	756	102.2%	12.5	B
SB	Left Turn	51	53	103.7%	17.7	B
	Through	411	425	103.4%	8.9	A
	Right Turn	21	22	106.7%	9.8	A
	Subtotal	483	500	103.6%	9.8	A
EB	Left Turn	15	17	111.3%	26.8	C
	Through	213	211	99.1%	18.9	B
	Right Turn	31	30	96.5%	16.9	B
	Subtotal	259	258	99.5%	19.3	B
WB	Left Turn	30	28	92.3%	20.3	C
	Through	185	175	94.8%	13.7	B
	Right Turn	94	92	97.6%	5.3	A
	Subtotal	309	295	95.4%	11.9	B
Total		1,791	1,809	101.0%	12.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 12		Broadway/Ord			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	119	108	90.8%	43.9	D
	Through	1,086	990	91.2%	23.6	C
	Right Turn	65	63	96.9%	30.3	C
	Subtotal	1,270	1,161	91.4%	26.2	C
SB	Left Turn	61	89	145.1%	51.4	D
	Through	636	647	101.8%	14.2	B
	Right Turn	46	45	98.5%	19.1	B
	Subtotal	743	781	105.1%	18.9	B
EB	Left Turn	121	125	103.5%	20.5	C
	Through	124	121	97.7%	21.7	C
	Right Turn	83	83	100.2%	16.8	B
	Subtotal	328	330	100.5%	19.8	B
WB	Left Turn	39	30	76.4%	37.7	D
	Through	144	110	76.5%	33.6	C
	Right Turn	131	106	81.2%	27.4	C
	Subtotal	314	246	78.5%	31.3	C
Total		2,655	2,518	94.9%	23.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 13 Alameda/Main Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	946	854	90.3%	7.8	A
	Right Turn	13	11	86.9%	2.7	A
	Subtotal	959	865	90.2%	7.8	A
SB	Left Turn	16	15	93.8%	33.6	C
	Through	882	874	99.1%	31.8	C
	Right Turn					
	Subtotal	898	889	99.0%	31.9	C
EB	Left Turn	1,057	922	87.2%	35.6	D
	Through	23	19	81.7%	38.8	D
	Right Turn	37	37	98.6%	15.6	B
	Subtotal	1,117	978	87.5%	34.9	C
WB	Left Turn	42	35	83.1%	44.2	D
	Through					
	Right Turn	73	76	103.4%	18.3	B
	Subtotal	115	110	96.0%	26.8	C
Total		3,089	2,842	92.0%	25.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 14

Broadway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	192	189	98.2%	37.3	D
	Through	901	857	95.1%	35.8	D
	Right Turn	182	169	92.8%	68.6	E
	Subtotal	1,275	1,214	95.2%	40.8	D
SB	Left Turn	112	109	97.0%	109.5	F
	Through	443	439	99.0%	25.4	C
	Right Turn	203	208	102.3%	10.8	B
	Subtotal	758	755	99.6%	33.9	C
EB	Left Turn	210	183	86.9%	190.2	F
	Through	1,055	728	69.0%	184.6	F
	Right Turn	64	54	83.8%	100.3	F
	Subtotal	1,329	964	72.5%	181.2	F
WB	Left Turn	139	118	84.7%	52.1	D
	Through	1,203	1,002	83.3%	17.5	B
	Right Turn	159	130	82.0%	8.1	A
	Subtotal	1,501	1,250	83.3%	19.9	B
Total		4,863	4,183	86.0%	65.5	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 15

Spring/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	30	30	100.7%	43.8	D
	Through	99	99	100.3%	45.9	D
	Right Turn	72	69	95.3%	37.8	D
	Subtotal	201	198	98.6%	43.0	D
EB	Left Turn					
	Through	1,126	1,013	90.0%	14.1	B
	Right Turn	223	208	93.4%	6.1	A
	Subtotal	1,349	1,221	90.5%	12.7	B
WB	Left Turn	231	219	94.7%	62.6	E
	Through	1,429	1,157	81.0%	51.7	D
	Right Turn	100	85	84.6%	19.6	B
	Subtotal	1,760	1,460	83.0%	51.6	D
Total		3,310	2,880	87.0%	34.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 16 Main/Cesar Chavez Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	427	325	76.0%	147.8	F
	Through	989	854	86.4%	208.0	F
	Right Turn	278	244	87.6%	190.4	F
	Subtotal	1,694	1,422	84.0%	189.6	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	105	99	94.0%	97.4	F
	Through	1,051	959	91.3%	54.4	D
	Right Turn					
	Subtotal	1,156	1,058	91.5%	58.8	E
WB	Left Turn					
	Through	1,348	1,095	81.2%	29.1	C
	Right Turn	23	25	109.1%	12.6	B
	Subtotal	1,371	1,120	81.7%	28.8	C
Total		4,221	3,600	85.3%	100.9	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 17

Alameda/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	113	110	97.5%	276.3	F
	Through	693	645	93.1%	57.6	E
	Right Turn	181	183	101.2%	61.2	E
	Subtotal	987	938	95.1%	83.8	F
SB	Left Turn	100	105	104.9%	25.2	C
	Through	647	643	99.4%	45.8	D
	Right Turn	214	196	91.5%	17.0	B
	Subtotal	961	944	98.2%	37.6	D
EB	Left Turn	150	131	87.5%	91.5	F
	Through	969	903	93.2%	16.3	B
	Right Turn	210	181	86.1%	3.3	A
	Subtotal	1,329	1,215	91.4%	23.4	C
WB	Left Turn	173	140	81.0%	37.8	D
	Through	1,044	835	80.0%	72.8	E
	Right Turn	116	90	77.3%	54.7	D
	Subtotal	1,333	1,065	79.9%	67.1	E
Total		4,610	4,162	90.3%	51.2	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 18

Union Station Driveway/Cesar Chavez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	71	4	5.2%	8.3	A
	Through					
	Right Turn	129	6	4.4%	57.8	E
	Subtotal	200	9	4.7%	48.9	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	1,163	1,031	88.7%	234.7	F
	Right Turn	87	20	22.5%	203.6	F
	Subtotal	1,250	1,051	84.1%	234.2	F
WB	Left Turn	22	82	372.3%	2.0	A
	Through	1,237	1,107	89.5%	2.4	A
	Right Turn					
	Subtotal	1,259	1,189	94.4%	2.4	A
Total		2,709	2,249	83.0%	106.4	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 19

Alameda/Los Angeles

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	890	842	94.6%	40.3	D
	Right Turn	109	95	86.7%	37.5	D
	Subtotal	999	936	93.7%	40.0	D
SB	Left Turn	72	80	110.7%	53.1	D
	Through	958	884	92.3%	12.3	B
	Right Turn					
	Subtotal	1,030	964	93.6%	15.8	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	203	202	99.4%	22.0	C
	Through					
	Right Turn	97	102	105.2%	46.6	D
	Subtotal	300	304	101.3%	30.6	C
Total		2,329	2,204	94.6%	27.9	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 20		Broadway/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,084	1,086	100.2%	7.5	A
	Right Turn					
	Subtotal	1,084	1,086	100.2%	7.5	A
SB	Left Turn					
	Through	508	482	94.8%	13.8	B
	Right Turn					
	Subtotal	508	482	94.8%	13.8	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	205	178	86.8%	37.9	D
	Through					
	Right Turn	650	580	89.2%	24.4	C
	Subtotal	855	758	88.7%	27.3	C
Total		2,447	2,325	95.0%	15.1	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 21 Spring/Arcadia Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn					
	Through	503	398	79.2%	22.4	C
	Right Turn	103	87	84.6%	10.6	B
	Subtotal	606	486	80.1%	20.1	C
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	213	245	115.2%	21.5	C
	Through	752	670	89.1%	18.8	B
	Right Turn					
	Subtotal	965	915	94.8%	19.6	B
Total		1,571	1,401	89.2%	19.8	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 22		Main/Arcadia			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	274	259	94.3%	17.3	B
	Through	1,433	1,294	90.3%	26.1	C
	Right Turn					
	Subtotal	1,707	1,553	91.0%	24.6	C
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn					
	Through	691	657	95.1%	25.8	C
	Right Turn	93	79	85.1%	29.9	C
	Subtotal	784	737	93.9%	26.3	C
Total		2,491	2,289	91.9%	25.2	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 23

Los Angeles/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	190	182	95.6%	6.6	A
	Through	434	419	96.6%	6.9	A
	Right Turn					
	Subtotal	624	601	96.3%	6.8	A
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	162	140	86.6%	39.1	D
	Through	594	553	93.1%	39.5	D
	Right Turn	53	45	84.5%	41.8	D
	Subtotal	809	738	91.2%	39.6	D
Total		1,433	1,339	93.4%	24.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 24

Alameda/Arcadia

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	22	35	158.2%	6.5	A
	Through	888	866	97.6%	4.6	A
	Right Turn	1,327	1,238	93.3%	4.4	A
	Subtotal	2,237	2,139	95.6%	4.5	A
SB	Left Turn	59	69	116.3%	46.3	D
	Through	721	647	89.7%	18.2	B
	Right Turn	127	124	97.8%	15.1	B
	Subtotal	907	839	92.5%	20.0	B
EB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
WB	Left Turn	253	210	83.2%	309.6	F
	Through	660	579	87.7%	321.8	F
	Right Turn	276	225	81.3%	375.0	F
	Subtotal	1,189	1,013	85.2%	330.7	F
Total		4,333	3,992	92.1%	95.2	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 25

Vignes/Ramirez

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	102	103	100.6%	40.7	D
	Through	393	373	95.0%	42.7	D
	Right Turn	79	81	101.9%	5.7	A
	Subtotal	574	556	96.9%	37.1	D
SB	Left Turn	520	513	98.7%	50.1	D
	Through	287	311	108.4%	30.8	C
	Right Turn	284	220	77.3%	30.2	C
	Subtotal	1,091	1,044	95.7%	40.0	D
EB	Left Turn	297	296	99.5%	97.7	F
	Through					
	Right Turn					
	Subtotal	297	296	99.5%	97.7	F
WB	Left Turn	204	184	90.1%	132.1	F
	Through	156	159	101.7%	168.2	F
	Right Turn	507	447	88.2%	210.8	F
	Subtotal	867	790	91.1%	183.7	F
Total		2,829	2,685	94.9%	82.9	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 26		Broadway/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	936	947	101.2%	15.6	B
	Right Turn	166	165	99.6%	13.1	B
	Subtotal	1,102	1,113	101.0%	15.3	B
SB	Left Turn	102	91	89.4%	24.3	C
	Through	611	566	92.7%	5.1	A
	Right Turn					
	Subtotal	713	658	92.2%	7.7	A
EB	Left Turn	148	139	94.0%	50.0	D
	Through	418	189	45.1%	27.0	C
	Right Turn	46	296	643.0%	12.1	B
	Subtotal	612	624	101.9%	24.4	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,427	2,394	98.6%	15.7	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 27 Spring/Aliso Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	113	93	82.3%	3.8	A
	Through	603	644	106.7%	13.2	B
	Right Turn					
	Subtotal	716	737	102.9%	12.0	B
EB	Left Turn					
	Through	604	394	65.1%	9.6	A
	Right Turn	82	50	60.6%	4.1	A
	Subtotal	686	443	64.6%	9.0	A
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		1,402	1,180	84.2%	10.9	B

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 28		Main/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,613	1,496	92.8%	88.2	F
	Right Turn	161	149	92.4%	21.4	C
	Subtotal	1,774	1,645	92.7%	82.4	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	94	64	67.7%	13.2	B
	Through	623	423	67.8%	6.3	A
	Right Turn					
	Subtotal	717	486	67.8%	7.2	A
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,491	2,131	85.6%	64.6	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 29

Los Angeles/Aliso

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	607	588	96.9%	44.2	D
	Right Turn	313	671	214.4%	39.5	D
	Subtotal	1,302	1,259	96.7%	41.7	D
SB	Left Turn					
	Through	162	140	86.4%	15.5	B
	Right Turn					
	Subtotal	162	140	86.4%	15.5	B
EB	Left Turn	477	357	74.9%	22.9	C
	Through	266	232	87.1%	32.5	C
	Right Turn	24	18	75.8%	33.2	C
	Subtotal	784	607	77.4%	27.1	C
WB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
Total		2,248	2,006	89.2%	35.6	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 30		Alameda/Aliso			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through	1,496	1,429	95.5%	34.2	C
	Right Turn	127	135	105.9%	10.5	B
	Subtotal	1,623	1,564	96.4%	32.3	C
SB	Left Turn	167	148	88.5%	102.4	F
	Through	807	710	88.0%	13.8	B
	Right Turn					
	Subtotal	974	858	88.1%	28.6	C
EB	Left Turn	570	536	94.1%	61.2	E
	Through	47	44	93.8%	49.1	D
	Right Turn	31	26	83.9%	11.5	B
	Subtotal	648	606	93.5%	58.0	E
WB	Left Turn	93	87	93.4%	75.7	E
	Through					
	Right Turn	171	173	101.2%	60.8	E
	Subtotal	264	260	98.5%	65.9	E
Total		3,509	3,288	93.7%	38.5	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 31 US 101 Ramps/Commercial Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	36	98.9%	34.8	C
	Through	435	432	99.3%	31.5	C
	Right Turn	25	24	96.8%	40.5	D
	Subtotal	496	492	99.2%	31.8	C
SB	Left Turn	130	139	106.7%	43.1	D
	Through	25	24	97.2%	37.8	D
	Right Turn	181	181	100.0%	5.0	A
	Subtotal	336	344	102.4%	21.8	C
EB	Left Turn	321	308	95.9%	39.4	D
	Through	66	64	97.6%	24.9	C
	Right Turn	11	10	90.0%	9.8	A
	Subtotal	398	382	96.0%	36.4	D
WB	Left Turn	1	1	120.0%	5.5	A
	Through	45	42	94.2%	50.5	D
	Right Turn	345	344	99.7%	30.5	C
	Subtotal	391	388	99.1%	32.9	C
Total		1,621	1,606	99.0%	31.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 32		Broadway/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	20	21	104.5%	45.8	D
	Through	790	820	103.8%	9.6	A
	Right Turn	72	67	93.3%	23.7	C
	Subtotal	882	908	102.9%	11.7	B
SB	Left Turn	45	57	126.0%	18.9	B
	Through	567	739	130.3%	9.9	A
	Right Turn	45	69	152.2%	10.3	B
	Subtotal	657	864	131.5%	10.5	B
EB	Left Turn	69	69	99.6%	102.8	F
	Through	765	761	99.5%	82.7	F
	Right Turn	21	18	84.8%	67.2	E
	Subtotal	855	848	99.2%	84.8	F
WB	Left Turn	97	84	86.6%	45.1	D
	Through	763	730	95.6%	12.0	B
	Right Turn	243	225	92.4%	9.7	A
	Subtotal	1,103	1,038	94.1%	14.5	B
Total		3,497	3,658	104.6%	29.1	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 33 Spring/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
SB	Left Turn	58	52	90.2%	88.9	F
	Through	518	552	106.6%	51.6	D
	Right Turn	109	92	83.9%	29.6	C
	Subtotal	685	696	101.6%	51.7	D
EB	Left Turn					
	Through	820	822	100.3%	54.6	D
	Right Turn	62	57	91.8%	49.0	D
	Subtotal	882	879	99.7%	54.2	D
WB	Left Turn	49	56	114.1%	8.9	A
	Through	994	957	96.3%	4.6	A
	Right Turn					
	Subtotal	1,043	1,013	97.1%	4.8	A
Total		2,610	2,588	99.2%	34.6	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 34		Main/Temple			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	278	272	97.7%	141.4	F
	Through	1,483	1,388	93.6%	188.8	F
	Right Turn	136	130	95.6%	173.1	F
	Subtotal	1,897	1,789	94.3%	180.3	F
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn	90	88	98.1%	59.5	E
	Through	788	784	99.5%	76.9	E
	Right Turn					
	Subtotal	878	872	99.4%	75.4	E
WB	Left Turn					
	Through	765	739	96.7%	26.9	C
	Right Turn	201	191	95.1%	39.2	D
	Subtotal	966	931	96.3%	29.5	C
Total		3,741	3,592	96.0%	113.7	F

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 35 Los Angeles/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	172	172	99.7%	69.6	E
	Through	897	859	95.8%	72.4	E
	Right Turn	82	79	96.0%	59.7	E
	Subtotal	1,151	1,110	96.4%	71.2	E
SB	Left Turn	97	92	94.8%	48.6	D
	Through	291	276	94.8%	25.7	C
	Right Turn	342	326	95.4%	60.3	E
	Subtotal	730	694	95.1%	45.7	D
EB	Left Turn	134	148	110.7%	66.5	E
	Through	674	657	97.4%	32.3	C
	Right Turn	116	109	93.9%	29.5	C
	Subtotal	924	914	98.9%	37.4	D
WB	Left Turn	71	66	93.2%	43.1	D
	Through	452	436	96.5%	49.7	D
	Right Turn	271	258	95.3%	44.6	D
	Subtotal	794	761	95.8%	47.5	D
Total		3,599	3,478	96.6%	51.8	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 36 San Pedro/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	166	162	97.4%	41.6	D
	Through					
	Right Turn	223	242	108.7%	40.9	D
	Subtotal	389	404	103.9%	41.4	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	822	799	97.3%	19.8	B
	Right Turn	31	27	88.1%	18.1	B
	Subtotal	853	827	96.9%	19.7	B
WB	Left Turn	39	49	124.4%	18.1	B
	Through	628	608	96.8%	10.3	B
	Right Turn					
	Subtotal	667	656	98.4%	10.8	B
Total		1,909	1,887	98.8%	21.5	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 37 Alameda/Temple Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	142	138	97.3%	35.8	D
	Through	1,254	1,193	95.1%	34.0	C
	Right Turn					
	Subtotal	1,396	1,331	95.4%	34.3	C
SB	Left Turn	47	38	80.6%	79.2	E
	Through	708	562	79.4%	9.1	A
	Right Turn	275	218	79.4%	7.7	A
	Subtotal	1,030	818	79.4%	12.7	B
EB	Left Turn	235	245	104.0%	52.7	D
	Through	576	583	101.2%	44.2	D
	Right Turn	234	214	91.5%	86.3	F
	Subtotal	1,045	1,042	99.7%	55.3	E
WB	Left Turn	32	32	101.3%	114.9	F
	Through	250	270	107.9%	69.5	E
	Right Turn	134	140	104.6%	77.7	E
	Subtotal	416	442	106.3%	75.4	E
Total		3,887	3,633	93.5%	40.4	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 38 Los Angeles/1st Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	36	34	95.3%	45.6	D
	Through	976	980	100.4%	71.2	E
	Right Turn	62	63	100.8%	70.0	E
	Subtotal	1,074	1,077	100.3%	70.4	E
SB	Left Turn	44	40	90.7%	38.6	D
	Through	413	394	95.4%	19.6	B
	Right Turn	21	17	82.4%	5.6	A
	Subtotal	478	451	94.4%	20.7	C
EB	Left Turn	62	31	49.7%	47.1	D
	Through	854	718	84.1%	94.4	F
	Right Turn	51	38	73.9%	59.4	E
	Subtotal	967	787	81.4%	90.6	F
WB	Left Turn	15	15	100.0%	39.7	D
	Through	504	519	102.9%	21.8	C
	Right Turn	113	110	97.0%	11.0	B
	Subtotal	632	643	101.8%	20.5	C
Total		3,151	2,958	93.9%	57.4	E

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 39

San Pedro/1st

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	10	20	198.0%	27.4	C
	Through	302	301	99.7%	28.9	C
	Right Turn	44	43	96.8%	29.7	C
	Subtotal	356	364	102.1%	28.8	C
SB	Left Turn	15	13	89.3%	37.6	D
	Through	40	32	79.3%	26.5	C
	Right Turn	15	30	198.7%	40.6	D
	Subtotal	70	75	107.0%	33.7	C
EB	Left Turn	15	31	204.0%	20.4	C
	Through	926	794	85.8%	33.9	C
	Right Turn	19	15	81.1%	5.9	A
	Subtotal	960	840	87.5%	32.9	C
WB	Left Turn	31	29	92.6%	21.1	C
	Through	607	594	97.8%	9.3	A
	Right Turn	72	74	102.8%	7.5	A
	Subtotal	710	697	98.1%	9.6	A
Total		2,096	1,975	94.2%	23.8	C

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 40		Central/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	154	154	100.1%	35.4	D
	Through					
	Right Turn	22	23	106.4%	42.9	D
	Subtotal	176	178	100.9%	35.8	D
SB	Left Turn					
	Through					
	Right Turn					
	Subtotal					
EB	Left Turn					
	Through	970	849	87.6%	55.6	E
	Right Turn	15	14	94.7%	34.6	C
	Subtotal	985	864	87.7%	55.3	E
WB	Left Turn	16	15	92.5%	16.1	B
	Through	556	557	100.1%	3.8	A
	Right Turn					
	Subtotal	572	572	99.9%	4.1	A
Total		1,733	1,613	93.1%	35.1	D

Vissim Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Union Station Master Plan
Alternative 2
PM Peak Hour

Intersection 41		Alameda/1st			Signal	
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)	
			Average	Percent	Average	LOS
NB	Left Turn	75	74	99.1%	29.0	C
	Through	923	921	99.8%	19.9	B
	Right Turn	122	120	98.4%	9.6	A
	Subtotal	1,120	1,116	99.6%	19.4	B
SB	Left Turn	35	29	83.1%	32.4	C
	Through	788	719	91.2%	16.9	B
	Right Turn	151	136	89.8%	8.9	A
	Subtotal	974	884	90.7%	16.0	B
EB	Left Turn	396	339	85.7%	39.0	D
	Through	486	441	90.7%	21.0	C
	Right Turn	110	93	84.2%	19.9	B
	Subtotal	992	873	88.0%	27.9	C
WB	Left Turn					
	Through	346	362	104.7%	41.5	D
	Right Turn	77	80	103.5%	12.3	B
	Subtotal	423	442	104.5%	36.0	D
Total		3,509	3,314	94.4%	23.0	C