STB FD 32760 10-17-97 K 6/15

DELAY SUMMARY
(hours)
Total Delay Per Peak Period - NORTHBOUND

	AM Peak						PM Peak						Off Peak						Total					
Year	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	2	3	5	2	3	5	12	23	35	13	25	38	11	21	31	12	22	33	25	47	70	27	51	76
Virginia	1	2	2	1	2	3	2	4	6	2	5	7	7	14	21	8	15	22	10	19	29	11	21	32
Sierra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington	1	3	4	2	3	4	3	5	7	3	5	8	8	15	22	9	16	24	12	22	34	13	25	37
Keystone	2	3	4	2	3	5	3	6	9	3	7	10	11	22	33	13	24	35	16	30	46	18	33	50
Lake	1	2	3	1	2	3	2	4	5	2	4	6	4	7	11	4	8	11	7	13	19	7	14	21
West	0	1	1	0	1	1	1	1	2	1	2	2	2	3	4	2	3	5	3	5	8	3	6	9
Ralston	1	1	2	1	1	2	1	2	3	1	2	3	2	4	5	2	4	6	3	5	10	4	7	11
Washington	0	0	1	0	1	1	0	1	1	0	1	1	1	2	3	1	2	3	2	3	5	2	3	5
Sutro	2	3	5	2	4	6	3	6	9	4	7	10	6	11	17	6	12	18	11	21	31	12	23	34
Morrill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Vine	1	1	2	1	1	2	1	2	3	1	2	3	2	4	6	2	4	6	4	7	10	4	7	11
Evans	2	4	5	2	4	6	3	6	9	4	7	11	6	11	17	7	13	19	11	21	31	13	24	36
Total	12	23	34	13	25	37	32	60	90	35	66	99	60	113	169	65	123	184	103	195	293	113	214	320

Total Delay Per Peak Period - SOUTHBOUND

	AM Peak						PM Peak						Off Peak						Total					
Year	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia	1	1	2	1	1	2	3	5	8	3	6	9	6	11	16	6	12	18	9	18	26	10	19	29
Sierra	4	7	10	4	8	11	10	18	28	12	22	33	20	38	57	22	42	62	33	63	94	38	71	107
Arlington	1	2	3	1	2	3	3	6	9	4	7	11	6	12	18	7	13	20	11	20	31	12	22	34
Keystone	1	3	4	2	3	4	5	10	15	6	12	18	10	18	27	11	20	30	16	31	47	18	35	52
Lake	1	2	2	1	2	3	2	5	7	3	5	7	3	6	9	3	6	9	6	12	18	7	13	19
West	0	1	1	0	1	1	1	2	3	1	2	3	1	2	4	1	3	4	3	5	7	3	5	8
Ralston	0	1	1	0	1	1	1	2	3	1	3	4	2	3	4	2	3	5	3	6	9	4	7	10
Washington	0	0	1	0	0	1	1	1	2	1	1	2	1	1	2	1	2	2	2	3	4	2	3	5
Sutro	1	3	4	2	3	4	4	8	12	5	9	13	5	9	14	5	10	15	10	20	30	11	22	32
Morrill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Vine	0	1	1	0	1	1	1	2	3	1	3	4	2	3	5	2	3	5	3	6	9	4	7	10
Evans	1	3	4	2	3	5	4	8	12	5	9	14	5	9	14	5	10	15	11	20	30	12	23	34
Total	12	22	34	13	25	37	36	69	103	42	79	118	60	113	169	65	123	185	108	204	306	120	227	341

TOTAL DAILY DELAY
ARTERIAL ONLY

	AM Peak						PM Peak						Off Peak						TOTAL ARTERIAL DAILY DELAY					
Trains/Day	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015						
Trains/Peak	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36						
Center	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	2007	2007	2007	2015	2015	2015
Center	2	3	5	2	3	5	12	23	35	13	25	38	11	21	31	12	22	33	12.7	24.0	36.0	12.7	24.0	36.0
Virginia	1	3	4	2	3	5	5	10	14	6	11	16	13	25	37	14	27	40	25	47	70	27	51	76
Sierra	4	7	10	4	8	11	10	18	28	12	22	33	20	38	57	22	42	62	20	37	55	21	41	61
Arlington	3	5	7	3	5	8	6	11	17	7	12	19	14	27	40	16	29	44	33	63	94	38	71	107
Keystone	3	5	8	3	6	9	9	16	24	10	19	28	21	40	60	23	44	65	23	43	64	25	47	70
Lake	2	4	6	2	4	6	4	8	12	5	9	13	7	13	19	7	14	21	33	61	92	36	68	102
West	1	2	2	1	2	3	2	3	5	2	4	6	3	5	8	3	6	9	13	25	37	14	27	40
Ralston	1	2	3	1	2	3	2	4	6	2	5	7	3	6	10	4	7	11	5	10	15	6	11	17
Washington	0	1	1	0	1	1	1	2	3	1	2	3	2	3	5	2	3	5	7	12	19	7	14	21
Sutro	3	6	9	4	7	10	7	14	21	8	16	23	11	20	30	12	22	33	3	6	9	3	6	9
Morrill	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	21	41	61	22	44	67
Vine	1	2	3	1	2	3	2	4	6	2	5	7	4	7	10	4	7	11	0	1	1	0	1	1
Evans	3	6	10	4	7	11	7	14	21	9	16	24	11	20	30	12	23	34	7	13	19	7	14	21
TOTAL	24	45	68	26	50	75	68	129	193	77	145	217	119	225	338	130	246	369	22	41	61	24	46	69
																			211	399	599	233	441	661

CITY OF RENO - RAILROAD DELAY STUDY
Summary of Results

AM PEAK - Northbound

Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
Trains/Day			2007 12.7	2007 24	2007 36	2015 12.7	2015 24	2015 36		
Trains/Peak	2007	2015	1	2	3	1	2	3	2007	2015
Center	58	61	97.87	184.94	277.41	105.52	199.41	299.11	100	102
Virginia	33	36	48.79	92.20	138.31	53.96	101.98	152.96	87	89
Sierra	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Arlington	45	49	84.95	160.54	240.82	94.16	177.94	266.91	111	114
Keystone	57	61	91.68	173.25	259.87	101.82	192.41	288.62	95	98
Lake	30	33	64.85	122.54	183.80	70.77	133.73	200.60	127	129
West	13	14	26.70	50.47	75.70	29.53	55.81	83.71	124	126
Ralston	15	17	32.84	62.06	93.10	36.24	68.49	102.73	127	129
Washington	8	8	15.28	28.88	43.32	16.38	30.95	46.42	118	119
Sutro	47	50	109.41	206.76	310.15	120.52	227.75	341.63	138	141
Morrill	1	1	1.92	3.63	5.45	1.92	3.63	5.45	112	112
Vine	17	18	33.49	63.28	94.92	36.45	68.88	103.31	119	120
Evans	48	52	114.61	216.58	324.87	126.18	238.45	357.68	140	143
TOTAL	372	400	722	1365	2048	793	1499	2249	117	118

AM PEAK - Southbound

Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
Trains/Day			2007 12.7	2007 24	2007 36	2015 12.7	2015 24	2015 36		
Trains/Peak	2007	2015	1	2	3	1	2	3	2007	2015
Center	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Virginia	27	29	37.78	71.39	107.08	41.54	78.51	117.76	82	84
Sierra	98	106	211.98	400.59	600.89	242.90	459.02	688.53	128	135
Arlington	37	40	65.38	123.54	185.32	71.99	136.05	204.08	105	107
Keystone	46	50	81.15	153.35	230.03	90.95	171.88	257.82	103	107
Lake	25	27	51.67	97.65	146.48	56.26	106.31	159.47	124	125
West	10	11	21.38	40.40	60.60	23.59	44.57	66.86	122	123
Ralston	12	14	26.16	49.44	74.16	28.79	54.41	81.61	124	125
Washington	6	7	12.35	23.33	35.00	13.22	24.98	37.48	117	117
Sutro	38	41	85.65	161.86	242.80	93.94	177.52	266.27	132	134
Morrill	1	1	1.57	2.97	4.45	1.57	2.97	4.45	112	112
Vine	14	15	27.03	51.07	76.61	29.38	55.52	83.28	118	118
Evans	40	43	89.54	169.20	253.80	98.15	185.48	278.22	133	136
TOTAL	355	383	712	1345	2017	792	1497	2246	117	119

PM PEAK - Northbound

Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
Trains/Day			2007 12.7	2007 24	2007 36	2015 12.7	2015 24	2015 36		
Trains/Peak	2007	2015	2	4	6	2	4	6	2007	2015
Center	103	109	736.36	1391.55	2087.32	801.08	1513.86	2270.79	198	204
Virginia	33	36	131.21	247.96	371.95	145.54	275.03	412.54	109	112
Sierra	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Arlington	37	40	150.31	284.06	426.09	167.15	315.87	473.80	114	117
Keystone	49	53	185.27	350.12	525.19	206.43	390.11	585.16	104	107
Lake	25	27	114.16	215.73	323.60	124.72	235.69	353.54	129	130
West	10	11	46.91	88.65	132.97	51.93	98.13	147.20	126	127
Ralston	12	14	57.82	109.28	163.91	63.89	120.75	181.12	129	131
Washington	6	7	26.73	50.51	75.76	28.65	54.15	81.22	119	120
Sutro	38	41	194.29	367.15	550.73	214.47	405.30	607.95	141	144
Morrill	1	1	3.34	6.32	9.48	3.34	6.32	9.48	112	112
Vine	14	15	58.60	110.73	166.10	63.81	120.59	180.88	120	121
Evans	38	43	194.29	367.15	550.73	223.95	423.21	634.82	141	146
TOTAL	367	396	1899	3589	5384	2095	3959	5938	129	131

PM PEAK - Southbound

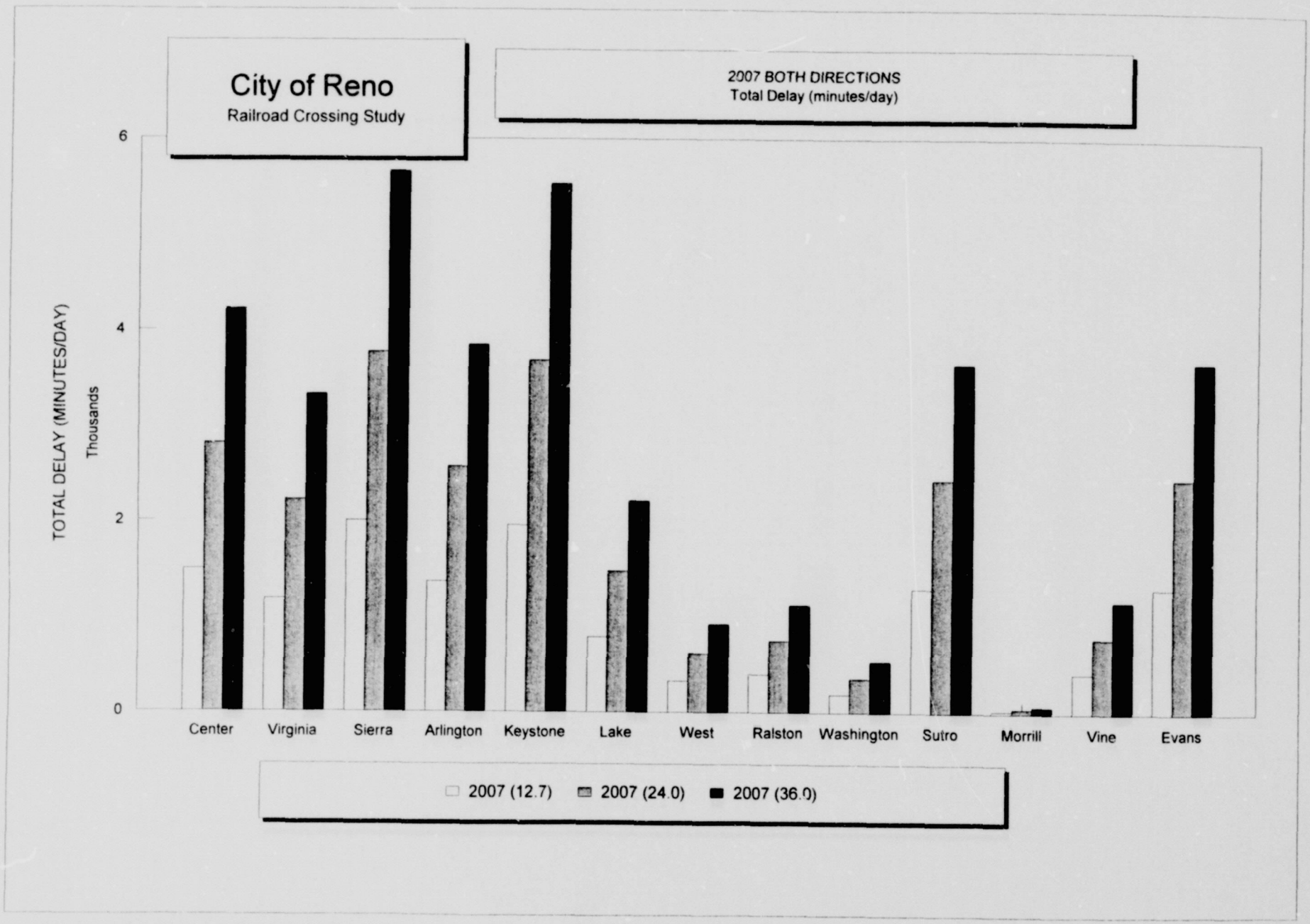
Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
Trains/Day			2007 12.7	2007 24	2007 36	2015 12.7	2015 24	2015 36		
Trains/Peak	2007	2015	2	4	6	2	4	6	2007	2015
Center	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Virginia	41	44	173.79	328.42	492.63	194.53	367.62	551.43	118	123
Sierra	99	107	586.26	1107.90	1661.85	700.86	1324.46	1986.69	165	183
Arlington	45	48	201.07	379.97	569.95	225.97	427.03	640.55	125	130
Keystone	60	65	327.96	619.76	929.64	385.12	727.79	1091.69	151	164
Lake	30	33	144.72	273.49	410.23	158.66	299.83	449.74	133	136
West	13	14	59.07	111.64	167.46	65.61	123.99	185.99	129	131
Ralston	15	17	73.34	138.60	207.90	81.36	153.76	230.63	134	136
Washington	8	8	33.22	62.78	94.18	35.66	67.39	101.09	121	122
Sutro	47	50	252.91	477.94	716.91	281.09	531.19	796.78	150	155
Morrill	1	1	4.10	7.74	11.61	4.10	7.74	11.61	112	112
Vine	17	18	72.96	137.88	206.82	79.59	150.41	225.61	122	123
Evans	47	52	252.91	477.94	716.91	294.45	556.44	834.66	150	157
TOTAL	421	457	2182	4124	6186	2507	4738	7106	134	139

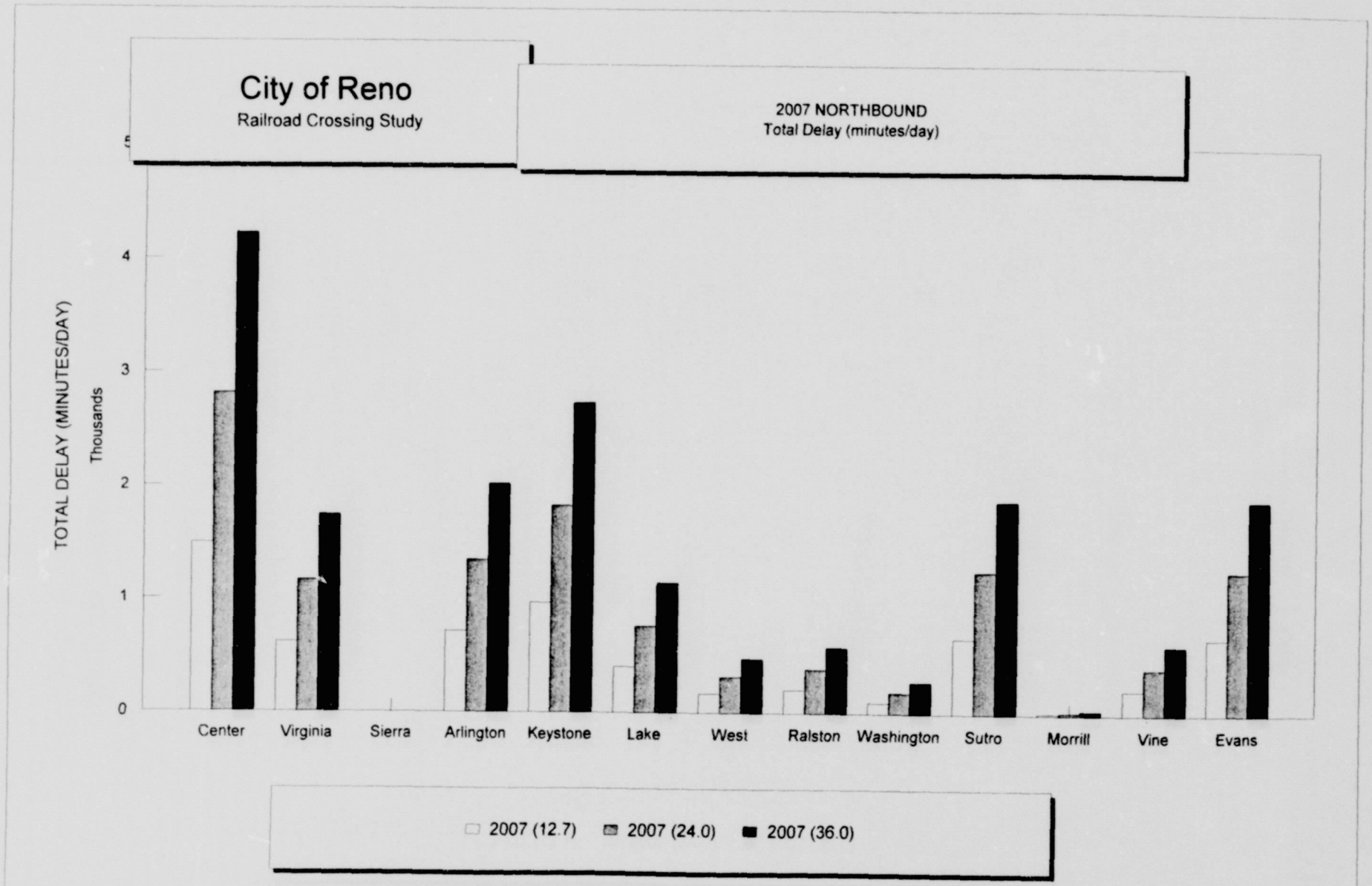
OFF PEAK - Northbound

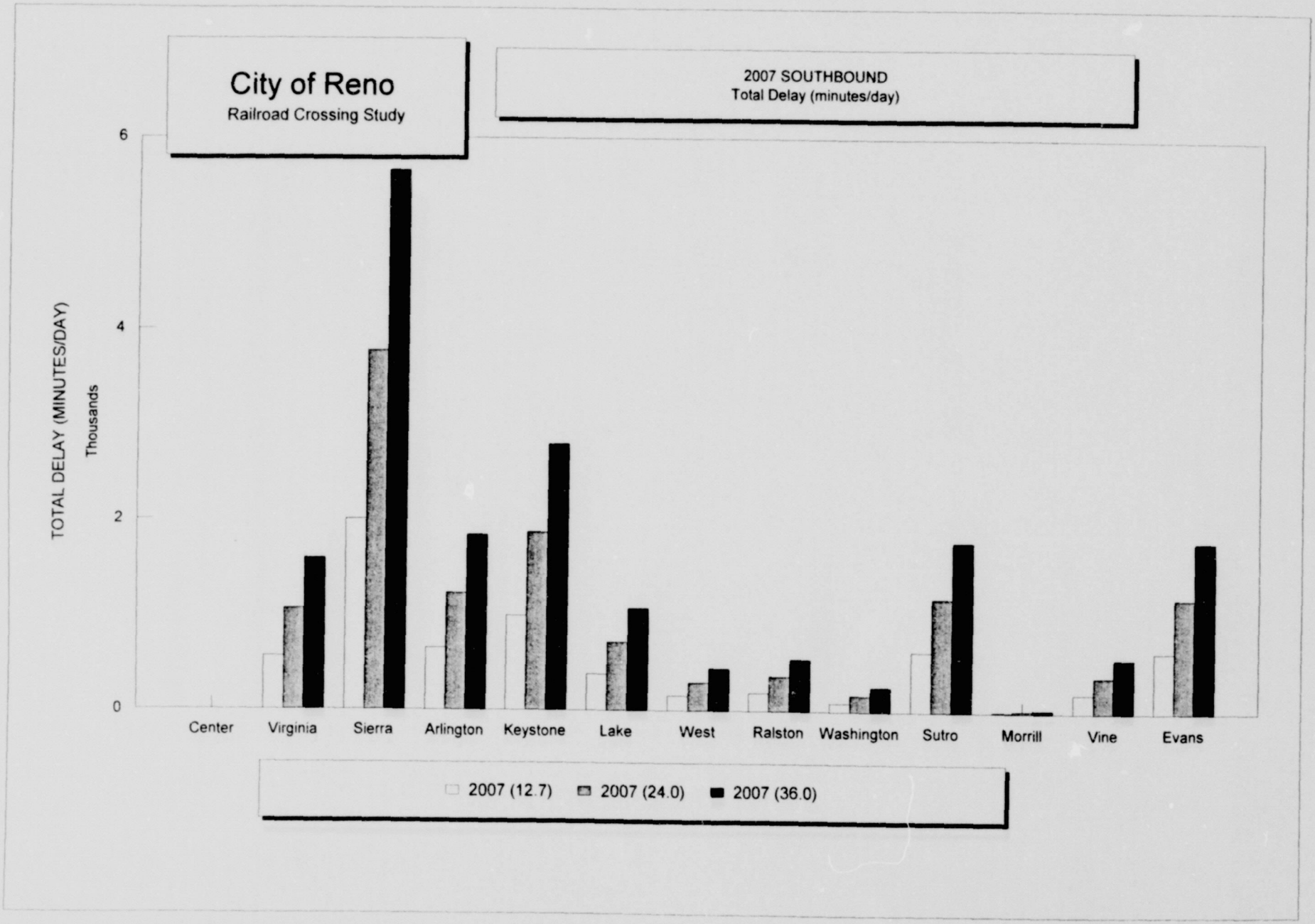
Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
			2007	2007	2007	2015	2015	2015		
Trains/Day			12.7	24	36	12.7	24	36		
Trains/Peak	2007	2015	10	18	27	10	18	27	2007	2015
Center	34	36	656.10	1239.88	1859.82	698.73	1320.44	1980.66	123	123
Virginia	22	24	434.31	820.75	1231.13	472.45	892.81	1339.22	122	123
Sierra	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Arlington	24	26	475.41	898.40	1347.60	517.24	977.47	1466.20	124	125
Keystone	35	38	688.03	1300.21	1950.31	750.33	1417.94	2126.91	123	124
Lake	12	13	223.45	422.26	633.39	242.05	457.42	686.13	117	117
West	5	6	93.35	176.42	264.63	102.50	193.70	290.55	116	116
Ralston	6	7	113.05	213.63	320.45	123.70	233.76	350.64	117	117
Washington	3	3	55.02	103.97	155.96	58.79	111.10	166.65	114	114
Sutro	19	20	357.10	674.84	1012.26	388.24	733.68	1100.52	120	121
Morrill	0	0	7.17	13.55	20.33	7.17	13.55	20.33	111	111
Vine	7	7	120.10	226.96	340.45	130.21	246.08	369.11	114	114
Evans	19	21	357.10	674.84	1012.26	402.54	760.70	1141.05	120	122
TOTAL	186	201	3580	6766	10149	3894	7359	11038	118	119

OFF PEAK - Southbound

Year	Maximum Vehicles in Queue		Total Delay (minutes)						Average Delay (sec/veh)	
			2007	2007	2007	2015	2015	2015		
Trains/Day			12.7	24	36	12.7	24	36		
Trains/Peak	2007	2015	10	18	27	10	18	27	2007	2015
Center	0	0	0.00	0.00	0.00	0.00	0.00	0.00		
Virginia	18	20	348.68	658.93	988.39	378.67	715.60	1073.40	120	121
Sierra	57	62	1199.09	2266.01	3399.01	1318.19	2491.06	3736.59	132	134
Arlington	20	21	381.00	719.99	1079.99	413.78	781.95	1172.92	121	122
Keystone	29	31	577.50	1091.34	1637.02	631.27	1192.96	1789.44	126	128
Lake	10	11	181.04	342.12	513.18	195.95	370.31	555.46	116	116
West	4	5	75.76	143.17	214.75	83.11	157.07	235.60	115	115
Ralston	5	5	91.58	173.07	259.60	100.12	189.20	283.80	116	116
Washington	2	3	44.80	84.66	126.99	47.85	90.43	135.65	113	113
Sutro	15	17	287.65	543.60	815.39	312.32	590.20	885.30	119	119
Morrill	0	0	5.86	11.08	16.62	5.86	11.08	16.62	111	111
Vine	5	6	97.75	184.72	277.08	105.93	200.19	300.28	113	114
Evans	15	17	287.65	543.60	815.39	323.62	611.56	917.34	119	119
TOTAL	182	197	3578	6762	10143	3917	7402	11102	118	119


City of Reno
Railroad Crossing Study
2007 BOTH DIRECTIONS
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
6
4
2
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

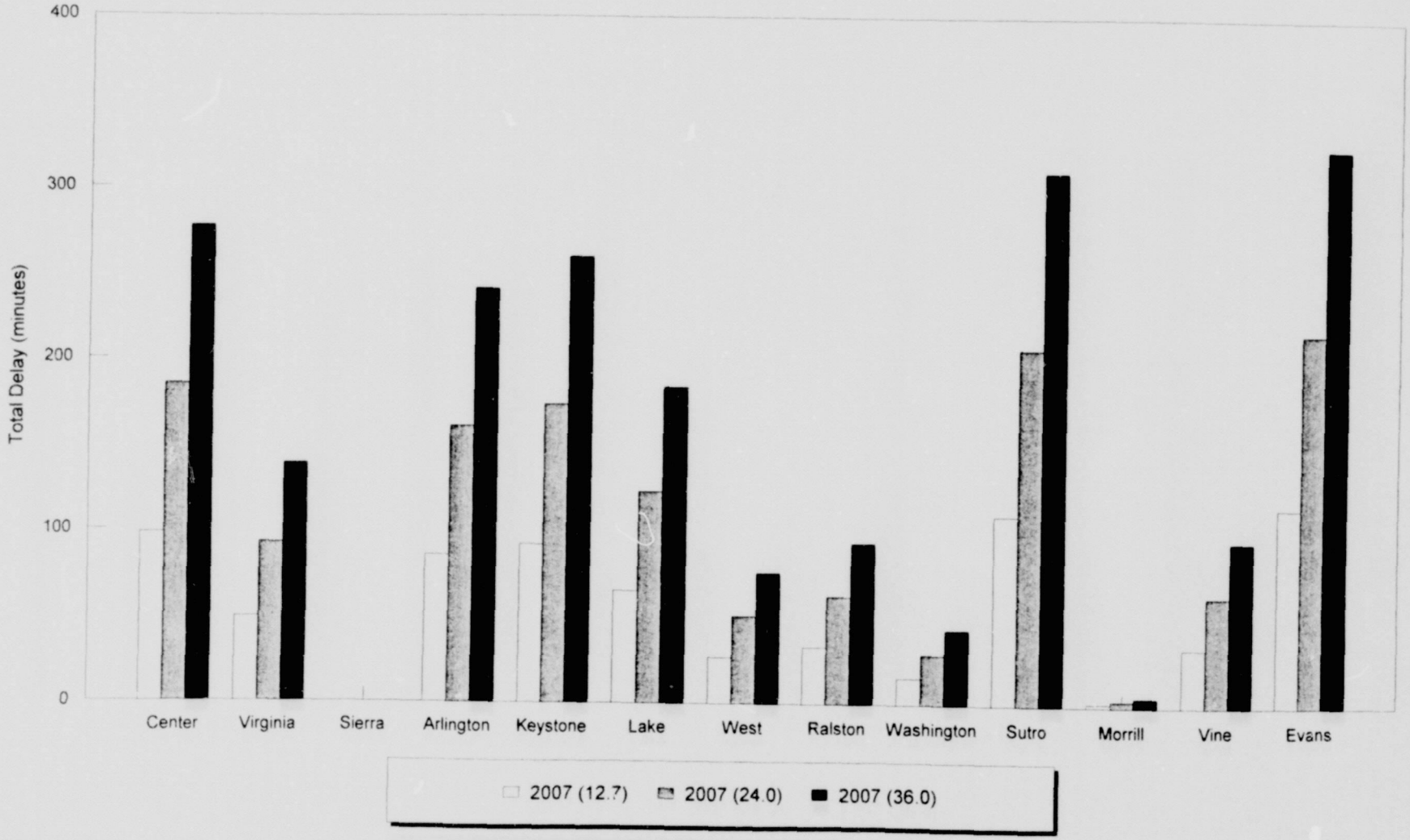

City of Reno
Railroad Crossing Study
2007 NORTHBOUND
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
0
1
2
3
4
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

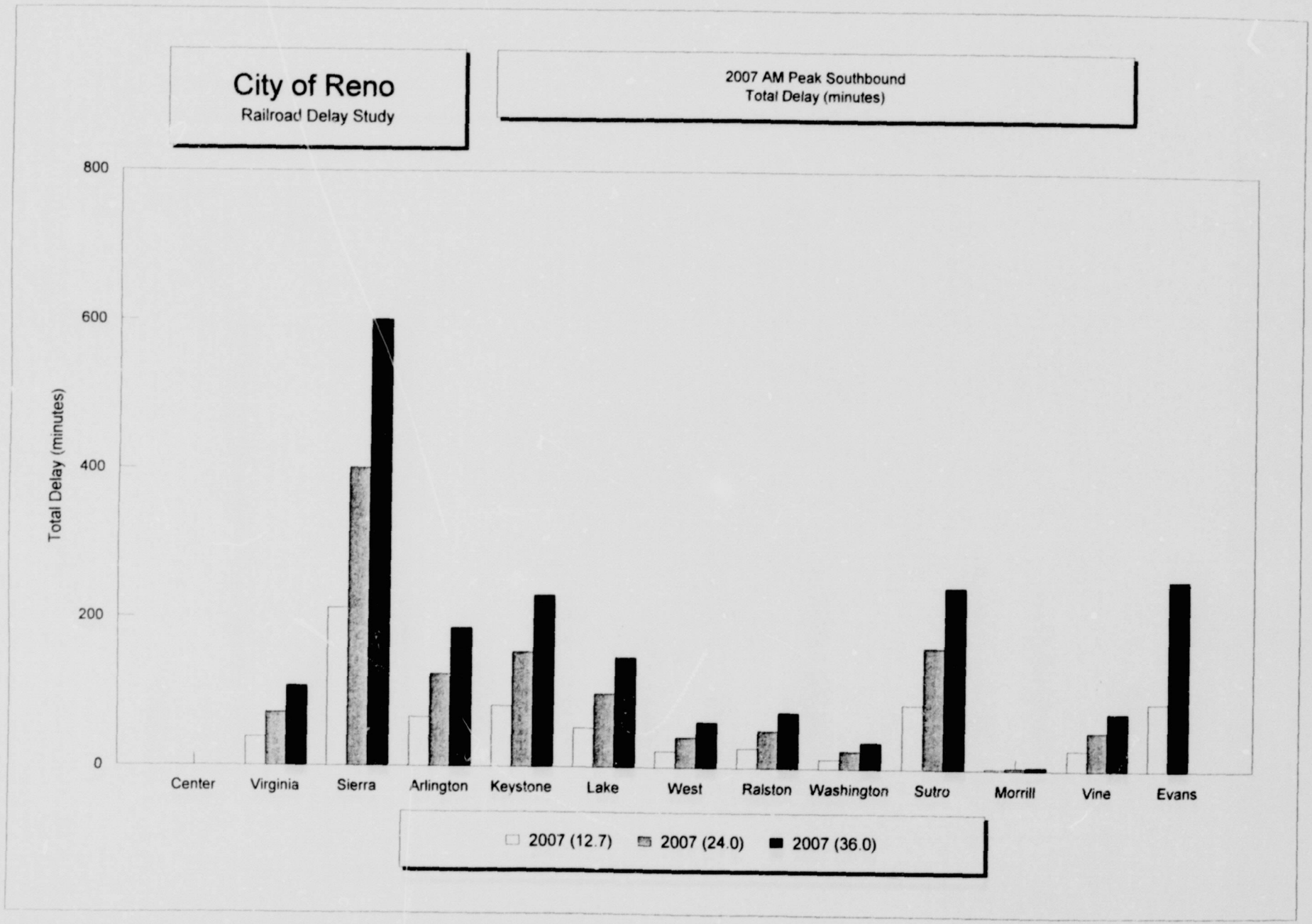

City of Reno
Railroad Crossing Study
2007 SOUTHBOUND
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
6
4
2
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

City of Reno

Railroad Delay Study

2007 AM Peak Northbound
Total Delay (minutes)

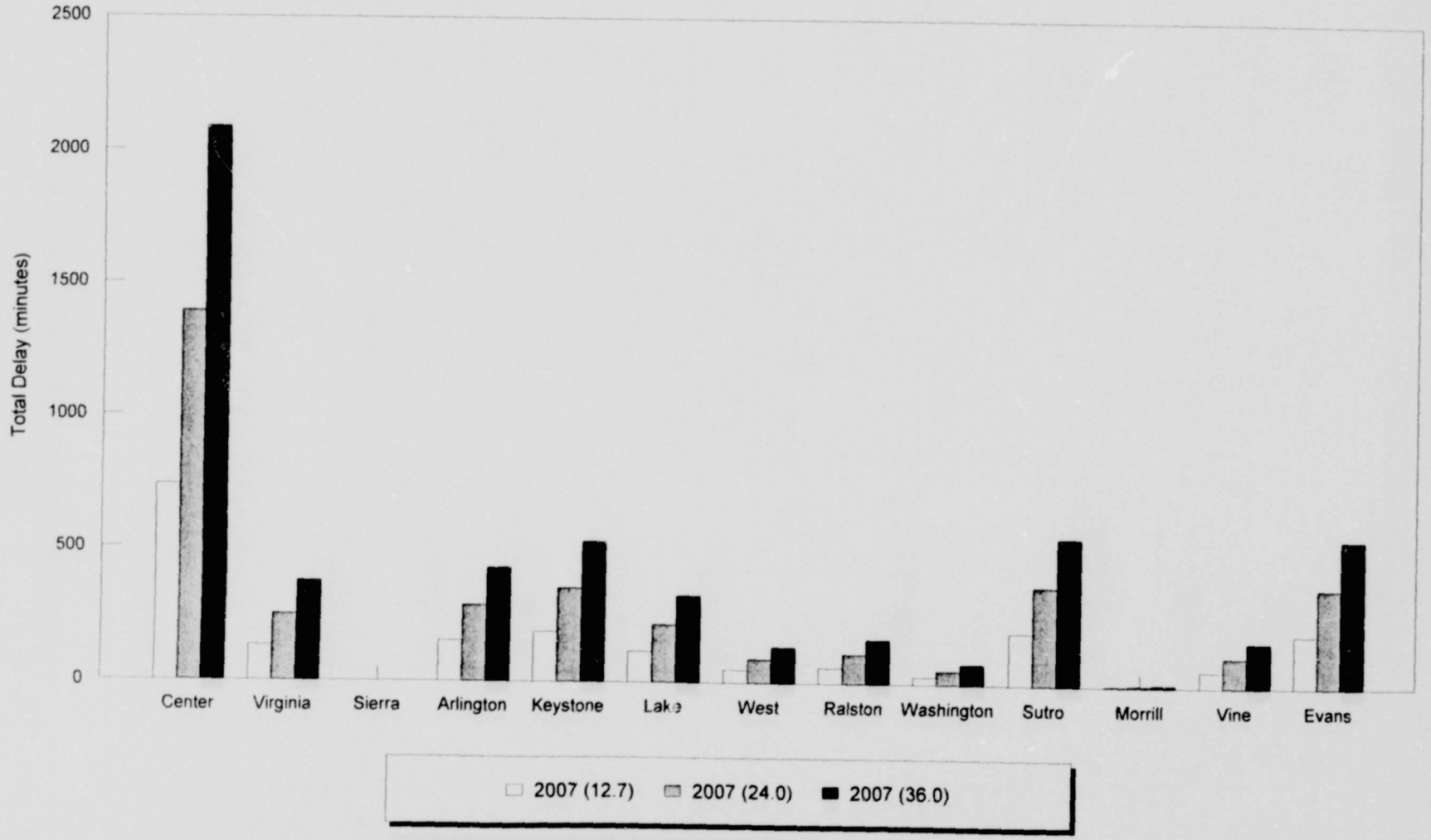



City of Reno
Railroad Delay Study
2007 AM Peak Southbound
Total Delay (minutes)
800
600
400
200
0
Total Delay (minutes)
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

City of Reno

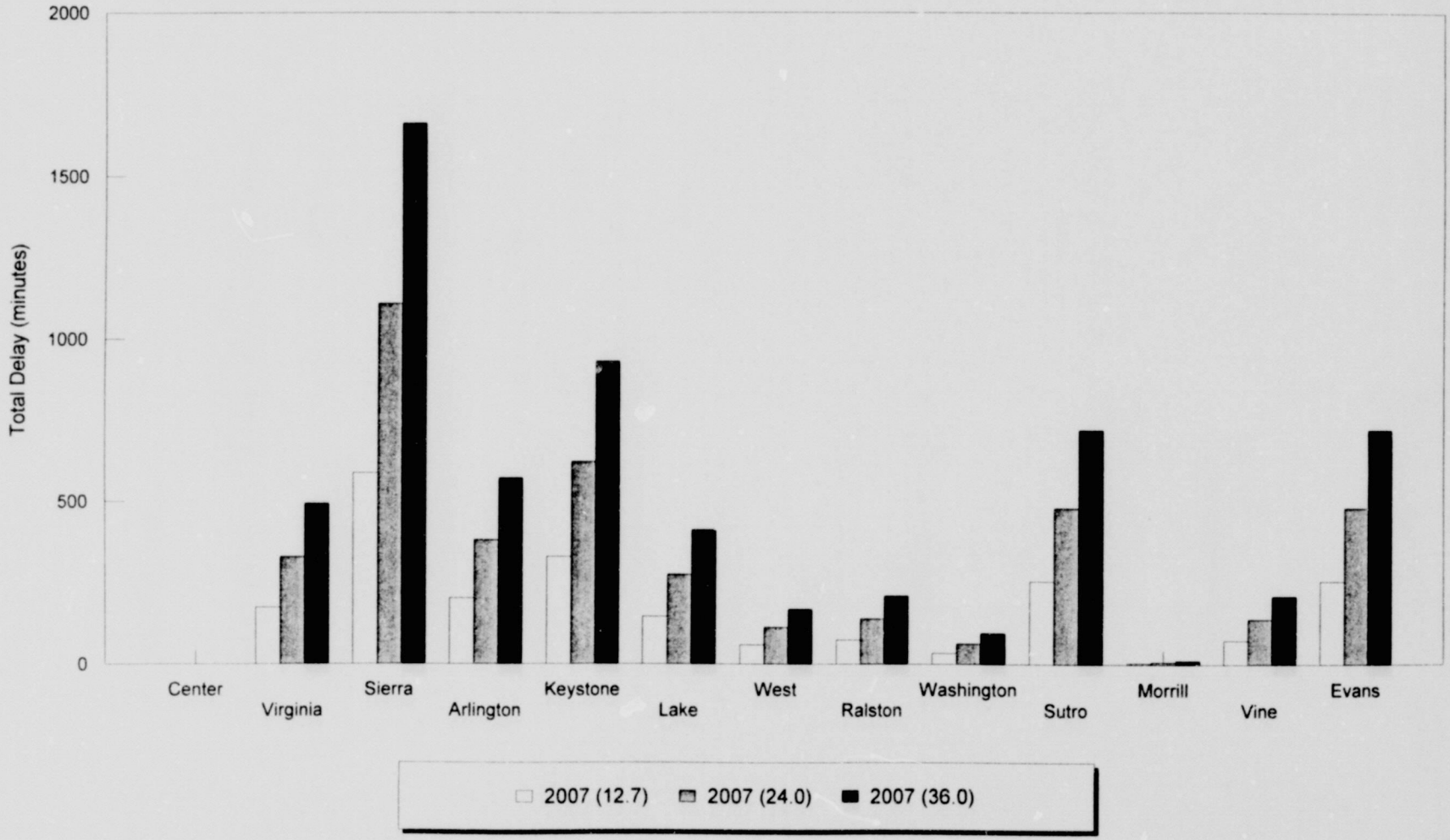
Railroad Delay Study

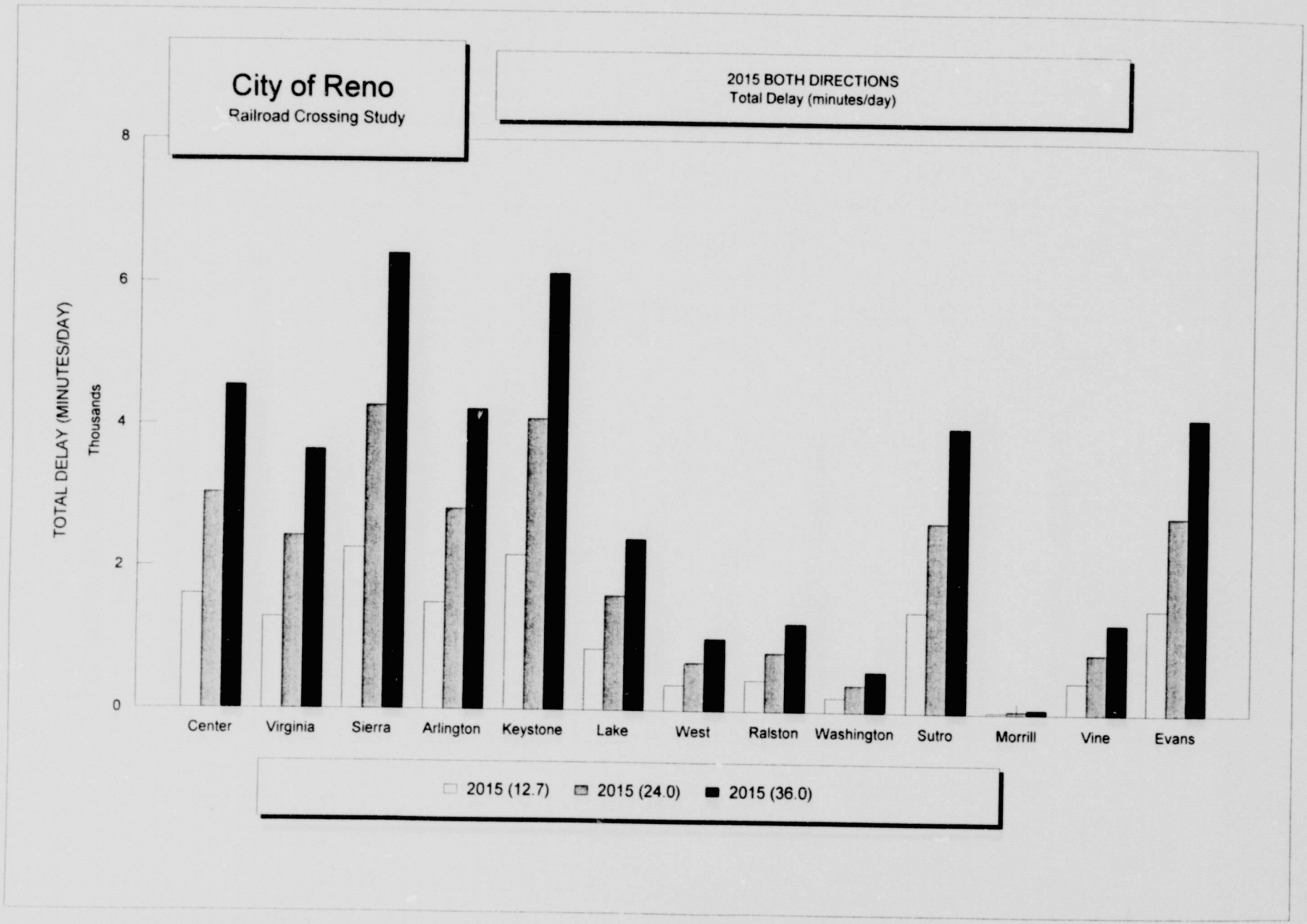
2007 PM Peak Northbound
Total Delay (minutes)

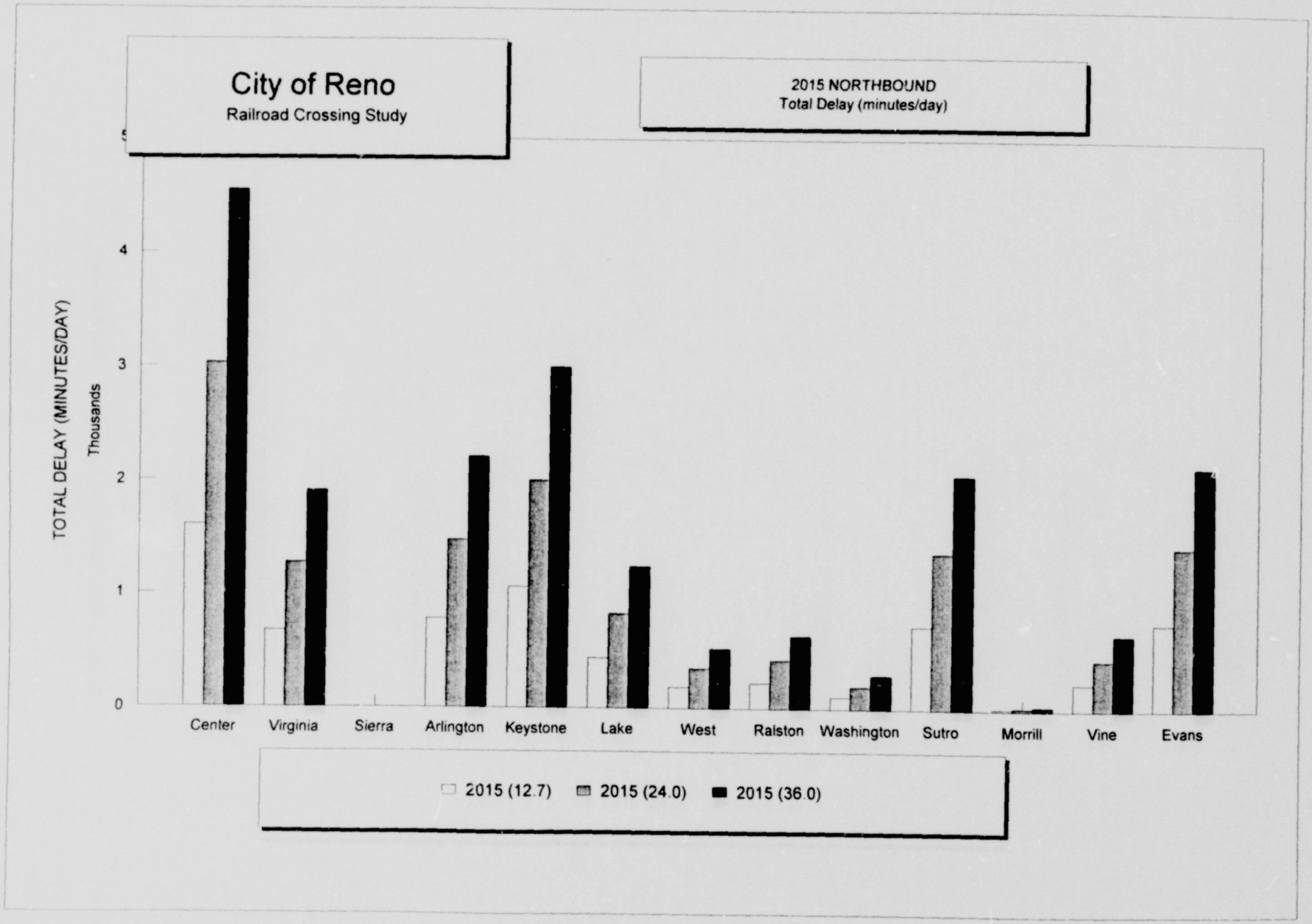


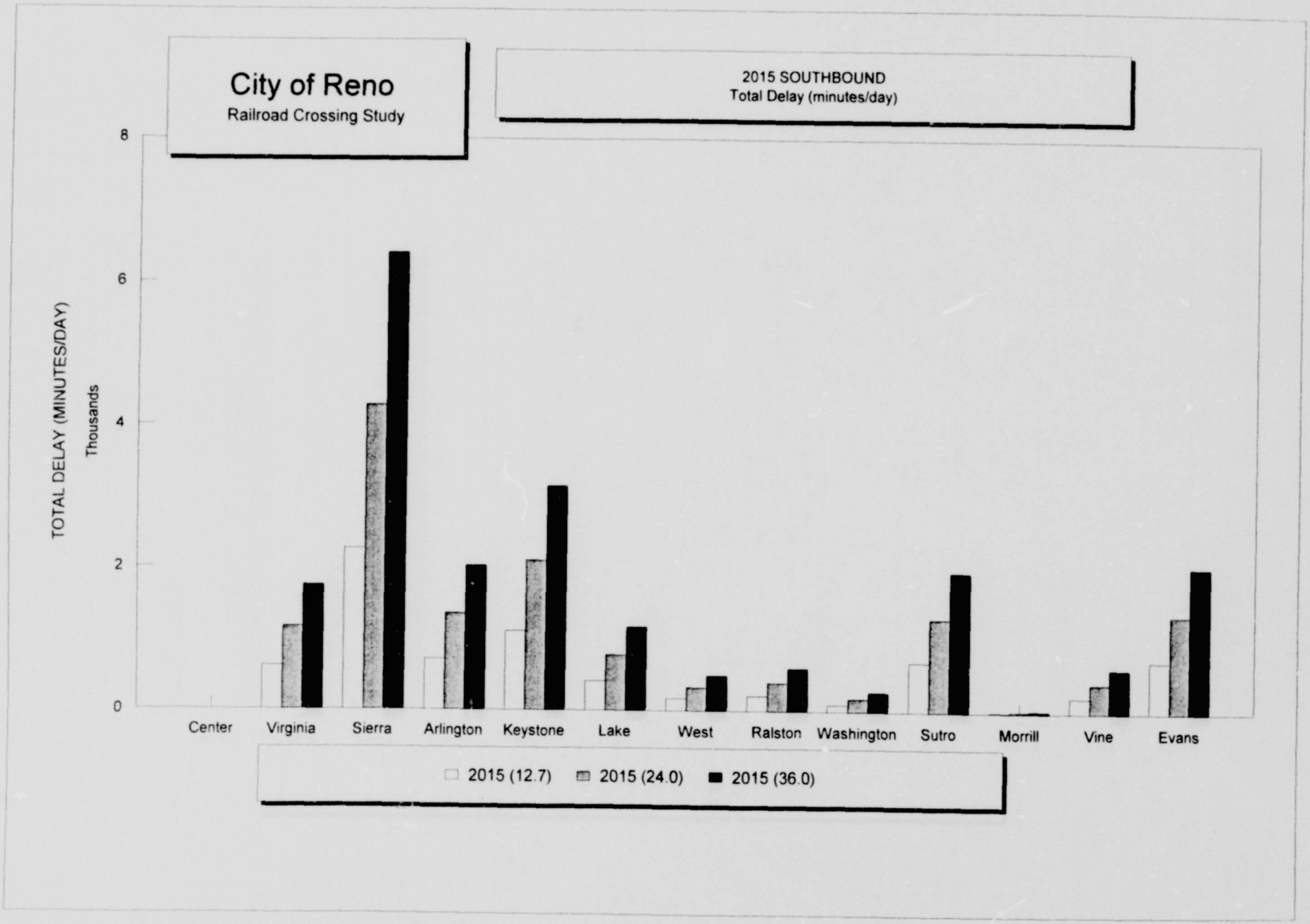
City of Reno
Railroad Crossing Study

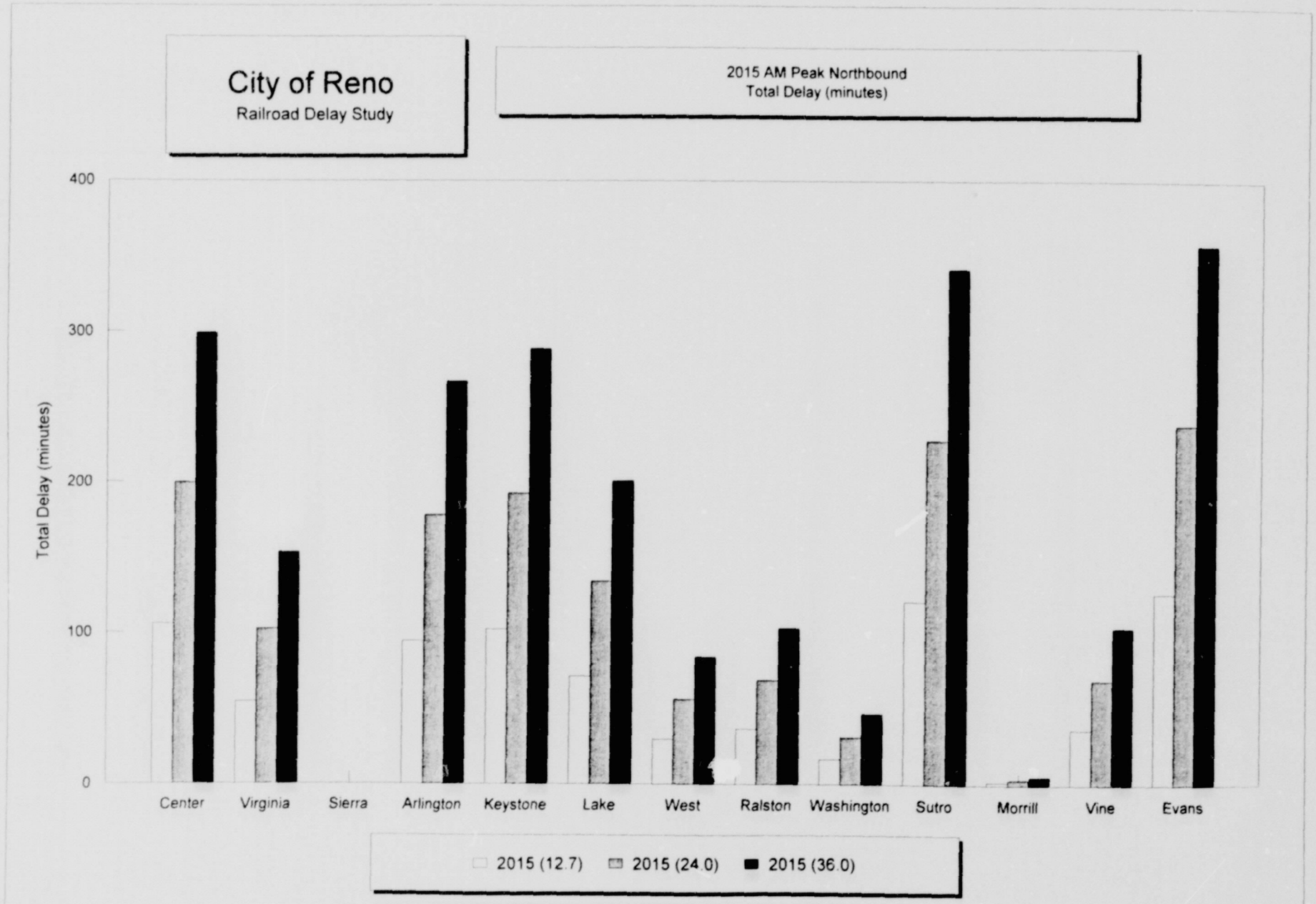
2007 PM Peak Southbound
Total Delay (minutes)




City of Reno
Railroad Crossing Study
2015 BOTH DIRECTIONS
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
8
6
4
2
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)


City of Reno
Railroad Crossing Study
2015 NORTHBOUND
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
0
1
2
3
4
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)

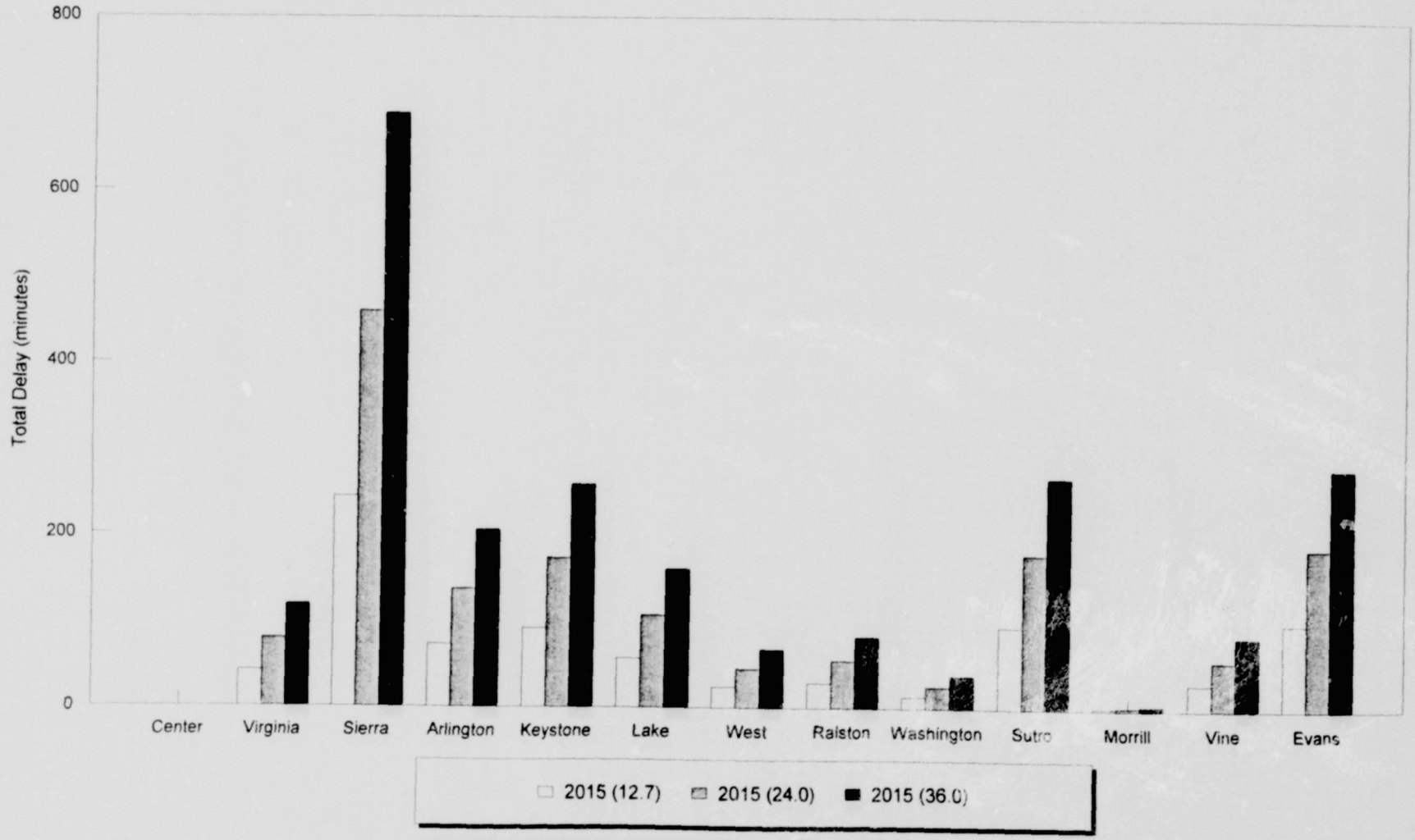

City of Reno
Railroad Crossing Study
2015 SOUTHBOUND
Total Delay (minutes/day)
TOTAL DELAY (MINUTES/DAY)
Thousands
8
6
4
2
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)


City of Reno
Railroad Delay Study
2015 AM Peak Northbound
Total Delay (minutes)
400
300
200
100
0
Total Delay (minutes)
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)

City of Reno

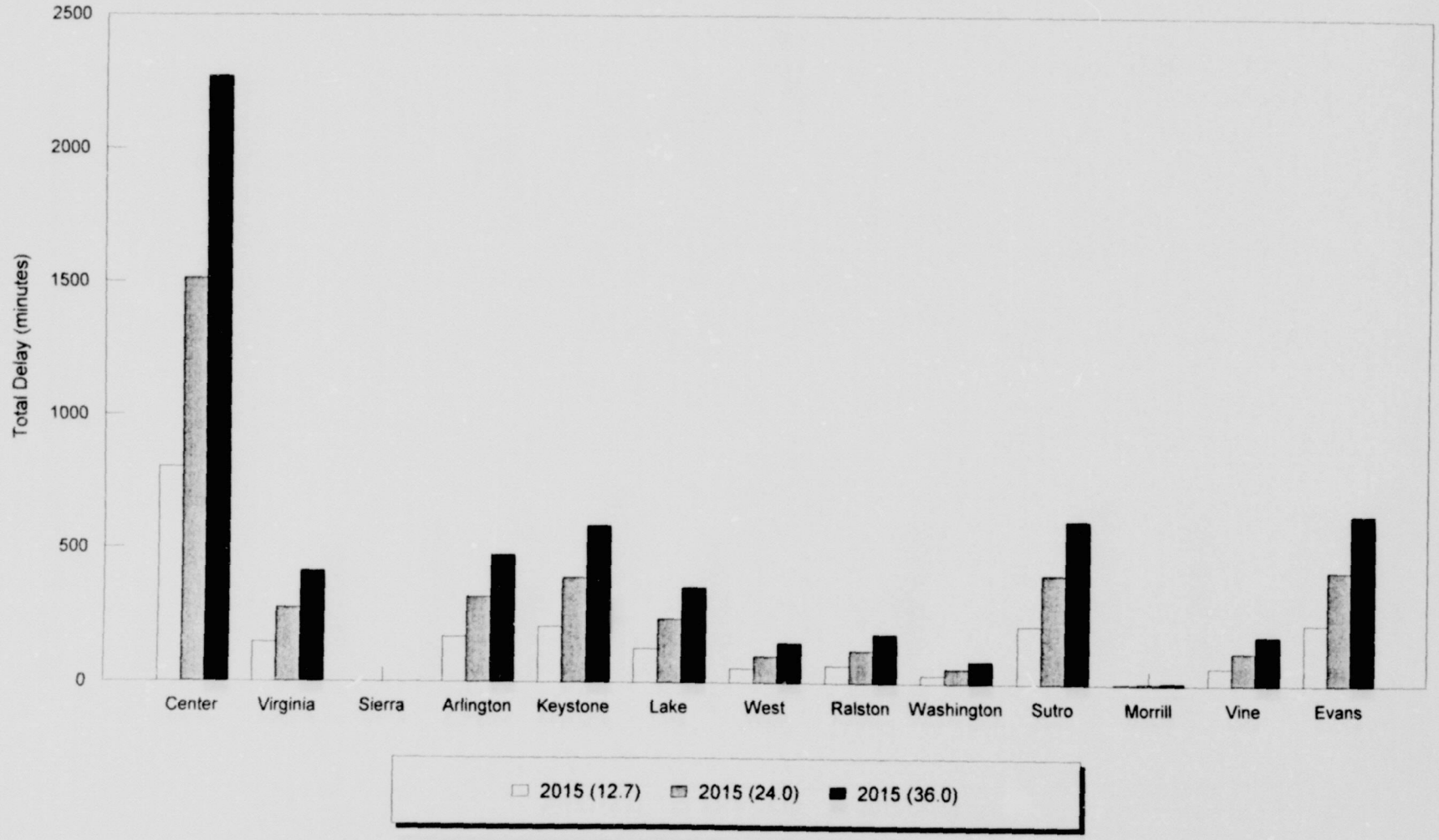
Railroad Delay Study

2015 AM Peak Southbound
Total Delay (minutes)



City of Reno
Railroad Delay Study

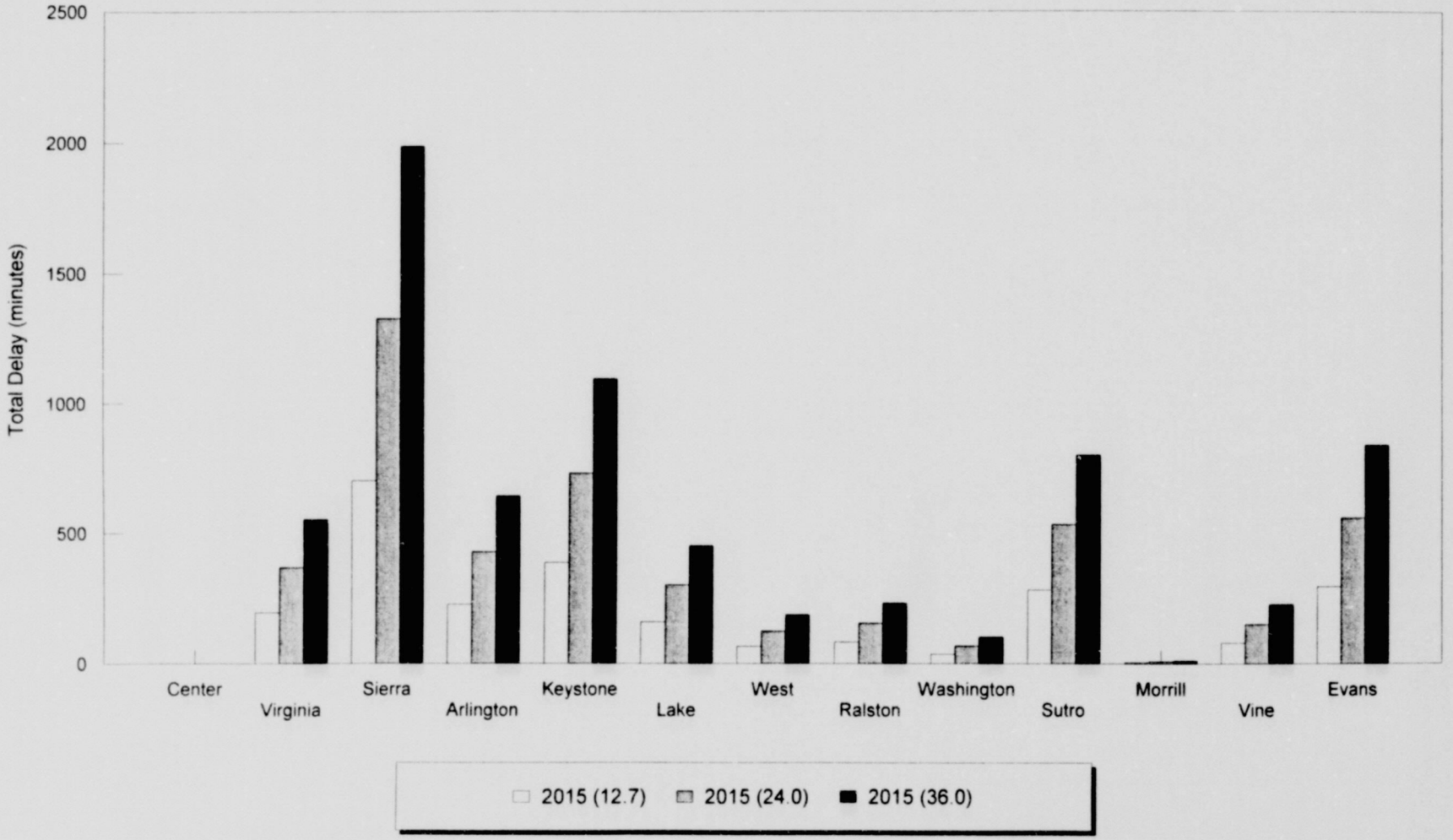
2015 PM Peak Northbound
Total Delay (minutes)



City of Reno

Railroad Crossing Study

2015 PM Peak Southbound
Total Delay (minutes)



APPENDIX H
QUEUING ANALYSIS RESULTS

- 1995
- 2000
- 2007
- 2015

QUEUE SUMMARY

Total Queue Per Peak Period - NORTHBOUND

	AM Peak						PM Peak						Off Peak						Tot...					
Year	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	50	94	141	55	104	156	189	358	534	208	393	590	272	514	771	300	567	851	510	964	1447	563	1064	1596
Virginia	29	54	81	32	60	89	61	116	174	67	127	191	181	341	512	199	375	563	270	511	767	298	562	843
Sierra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington	39	74	110	43	81	121	67	127	191	74	140	210	196	371	556	215	407	611	302	571	857	332	628	941
Keystone	49	93	139	54	102	153	91	171	257	100	188	283	285	539	808	313	592	888	425	803	1204	467	883	1324
Lake	26	49	74	29	54	81	45	86	128	50	94	141	98	185	277	107	202	303	169	319	479	185	350	525
West	11	21	31	12	23	34	19	36	54	21	40	59	41	78	117	45	85	128	71	135	202	78	148	221
Ralston	13	25	37	14	27	41	23	43	64	25	47	71	49	92	138	54	102	154	84	160	239	94	177	266
Washington	6	12	18	7	14	20	11	21	32	13	24	36	24	46	69	27	51	77	42	79	119	47	89	133
Sutro	40	76	114	44	84	126	70	132	198	77	146	219	151	285	428	166	314	472	261	493	740	288	544	816
Morrill	1	2	3	1	2	3	2	3	5	2	3	5	4	7	11	4	7	11	7	13	19	7	13	19
Vine	14	27	41	16	30	45	25	47	71	28	52	78	54	102	153	59	112	168	93	177	265	103	194	291
Evans	0	0	0	46	87	131	0	0	0	80	151	227	0	0	0	173	326	489	0	0	0	299	564	847
Total	279	527	790	353	667	1000	603	1139	1709	744	1405	2108	1354	2560	3839	1563	3143	4715	2236	4225	6338	2760	5215	7823

Total Queue Per Peak Period - SOUTHBOUND

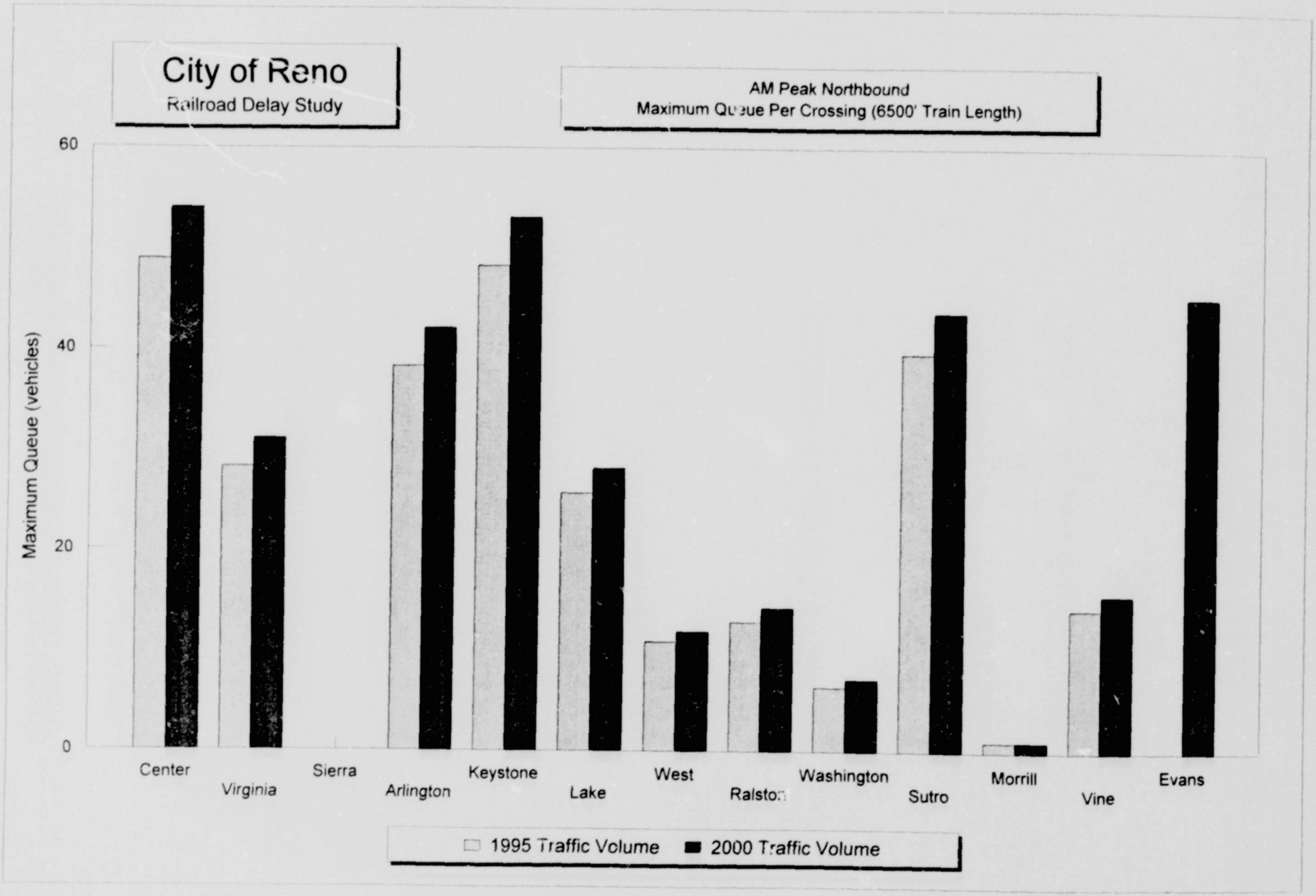
	AM Peak						PM Peak						Off Peak						Total					
Year	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia	23	44	67	26	49	73	75	141	212	82	156	233	148	279	419	163	307	461	246	465	697	271	511	767
Sierra	85	160	240	93	176	264	181	342	512	199	376	564	462	873	1310	509	962	1443	727	1374	2062	801	1514	2271
Arlington	32	60	90	35	66	99	82	155	233	90	171	256	160	303	455	176	333	500	274	519	778	302	570	855
Keystone	40	76	114	44	83	125	111	209	314	122	230	345	233	441	661	256	485	727	384	726	1089	422	798	1197
Lake	21	40	60	23	44	66	55	105	157	61	115	172	80	151	227	88	166	248	157	296	444	172	324	486
West	9	17	26	10	19	28	23	44	66	26	48	73	34	64	96	37	70	105	66	125	188	72	137	205
Ralston	11	20	30	12	22	34	28	52	78	31	58	87	40	75	113	44	84	126	78	148	222	87	164	246
Washington	5	10	15	6	11	17	14	26	39	15	29	44	20	37	56	22	42	63	39	73	110	43	82	123
Sutro	33	62	93	36	69	103	86	162	242	94	178	267	123	233	350	136	257	386	242	457	686	267	504	756
Morrill	1	2	2	1	2	2	2	4	6	2	4	6	3	6	9	3	6	9	6	12	18	6	17	18
Vine	12	22	33	13	24	37	31	58	87	34	64	95	44	83	125	49	92	138	87	164	245	95	180	270
Evans	0	0	0	38	71	107	0	0	0	98	185	277	0	0	0	141	267	400	0	0	0	277	523	784
Total	272	514	770	337	636	955	687	1298	1947	854	1613	2420	1348	2547	3820	1624	3069	4604	2306	4359	6538	2815	5319	7979

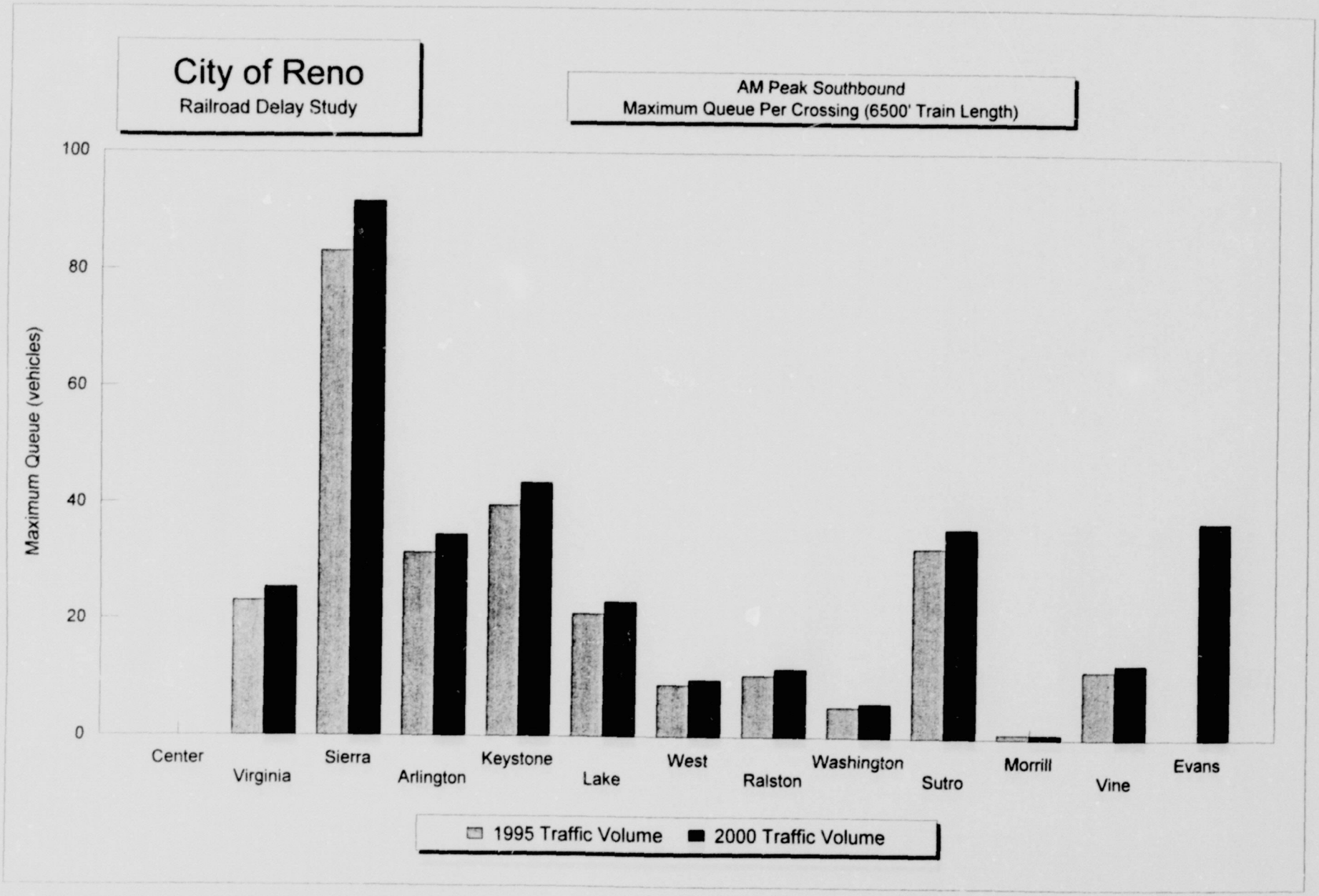
TOTAL DAILY QUEUE

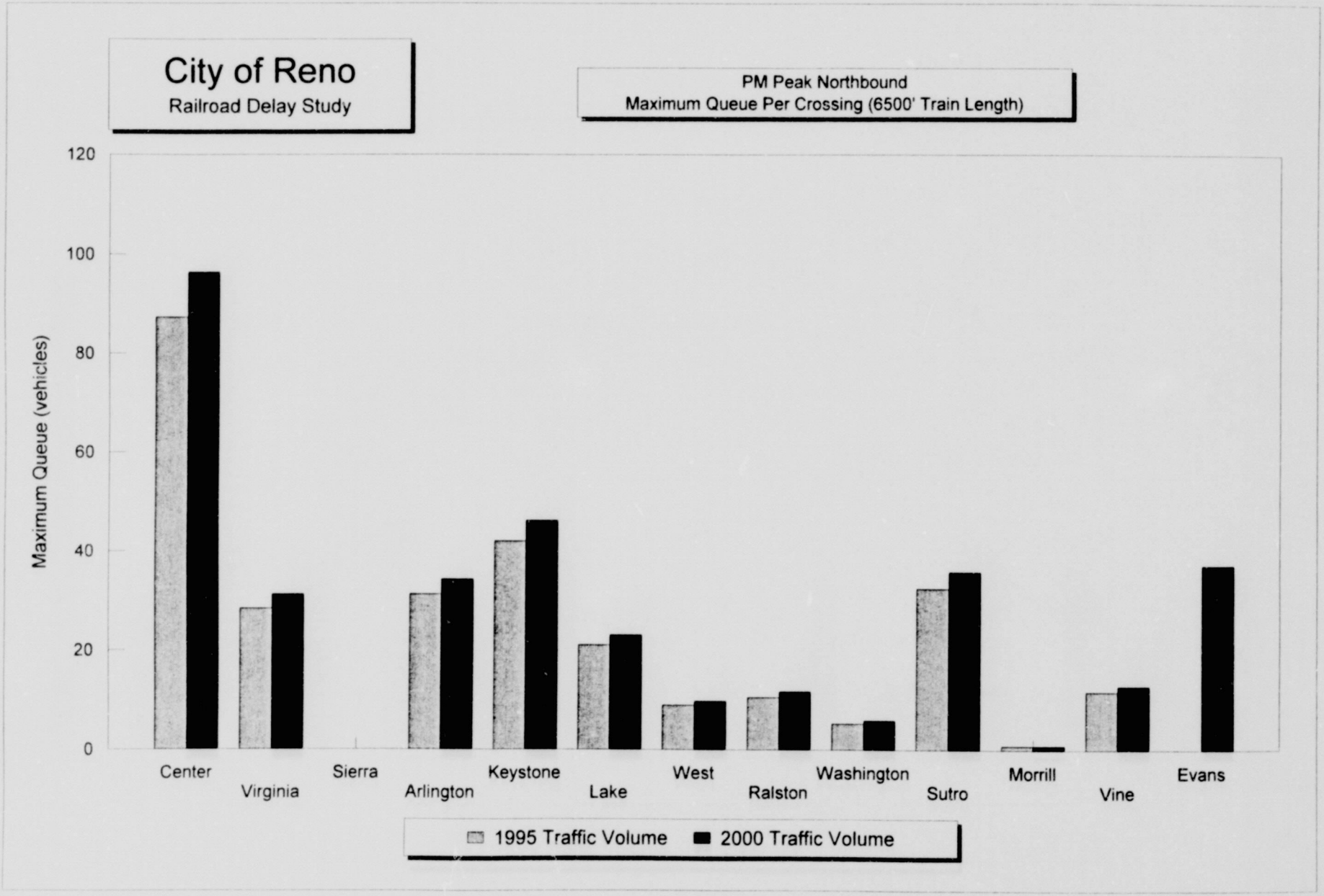
	AM Peak						PM Peak						Off Peak						TOTAL DAILY QUEUE					
Year	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24.0	36.0	12.7	24.0	36.0
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0						
Center	50	94	141	55	104	156	189	358	534	208	393	590	272	514	771	300	567	851	510	964	1447	563	1064	1596
Virginia	52	99	148	57	108	163	136	257	386	150	283	424	328	620	931	361	683	1024	516	976	1464	568	1074	1610
Sierra	85	160	240	93	176	264	181	342	512	199	376	564	462	873	1310	509	962	1443	727	1374	2062	801	1514	2271
Arlington	71	134	201	78	147	220	149	283	424	164	310	466	356	674	1010	392	740	1110	577	1090	1635	634	1197	1796
Keystone	89	169	253	98	185	278	201	381	571	222	419	628	518	979	1469	570	1077	1615	809	1529	2293	889	1681	2521
Lake	47	90	134	52	98	147	101	190	285	110	208	313	178	336	504	195	368	552	326	615	923	357	674	1012
West	20	38	57	22	41	62	43	80	121	47	88	132	75	142	213	82	155	233	138	260	390	150	284	427
Ralston	24	45	67	26	50	74	50	95	143	56	105	158	89	168	252	98	186	279	163	308	461	181	341	512
Washington	12	22	33	13	25	37	25	47	71	28	53	79	44	83	125	49	93	140	81	152	229	90	171	256
Sutro	73	138	207	81	152	229	155	294	441	171	324	486	274	519	778	303	572	858	503	951	1426	555	1048	1572
Morrill	2	4	5	2	4	5	4	8	11	4	8	11	7	13	20	7	13	20	13	24	37	13	24	37
Vine	26	49	74	29	54	82	56	105	158	61	116	173	98	185	278	108	204	306	180	340	510	198	374	561
Evans	0	0	0	84	158	238	0	0	0	178	336	504	0	0	0	314	593	889	0	0	0	575	1087	1631
TOTAL	550	1040	1560	690	1303	1955	1290	2437	3656	1597	3019	4528	2702	5106	7660	3287	6213	9319	4542	8584	12876	5574	10534	15802

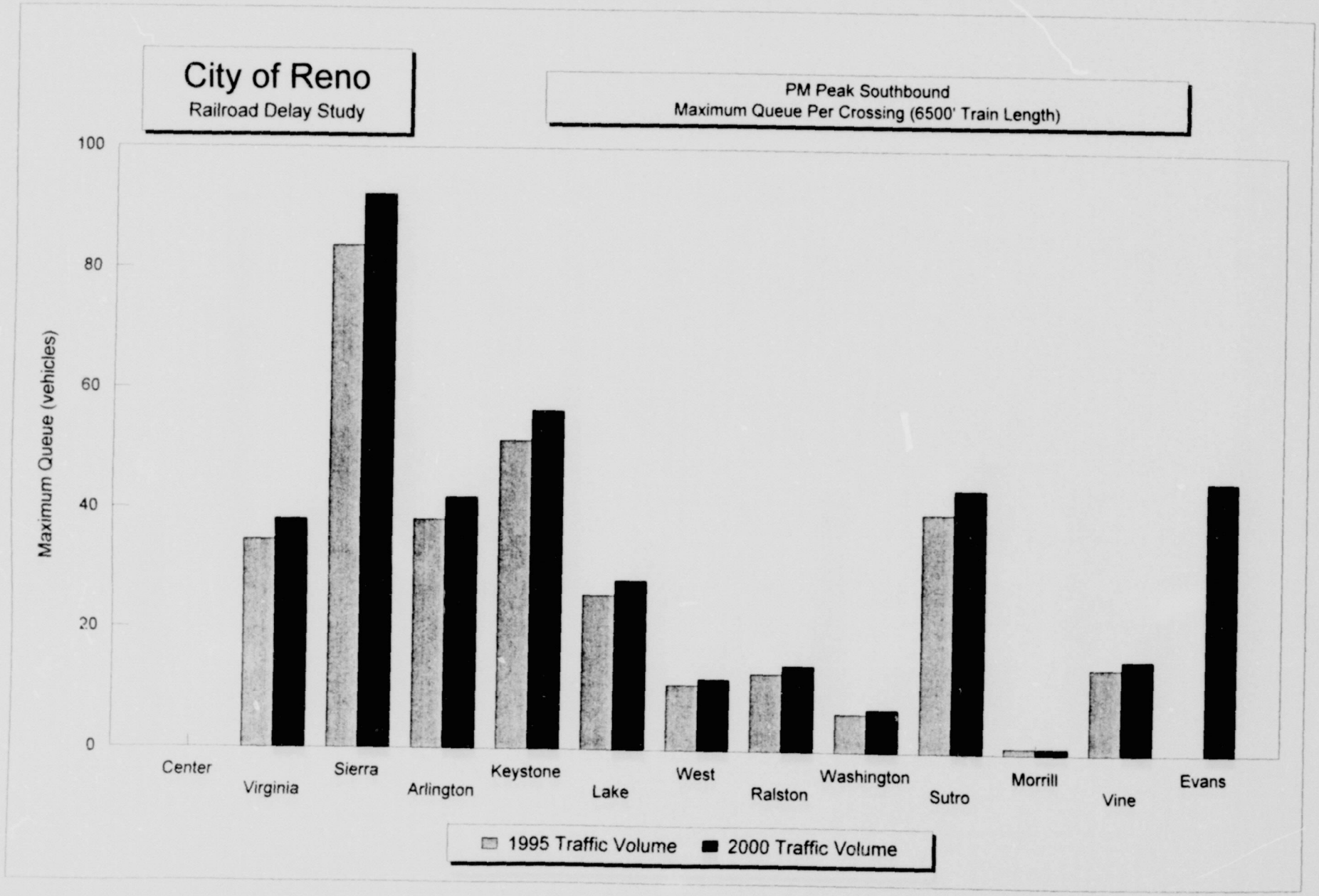
Time when Queue Dissipates (sec)

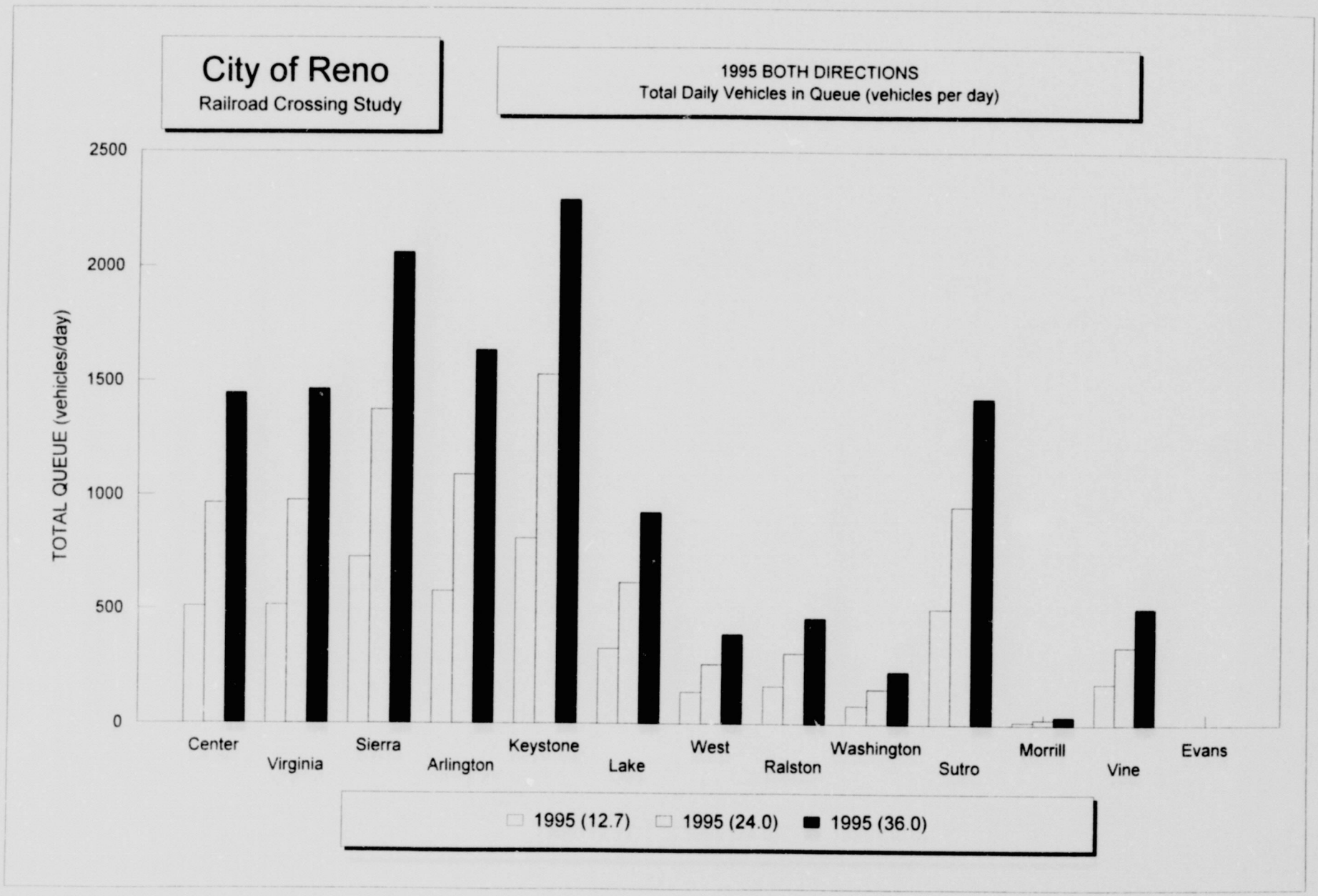
	Northbound - AM		Niorthbound - PM		Southbound - AM		Southbound - PM	
	1995	2000	1995	2000	1995	2000	1995	2000
Center	191	196	370	385	0	0	0	0
Virginia	165	170	207	213	158	161	221	229
Sierra	0	0	0	0	232	245	281	307
Arlington	211	217	215	222	201	205	231	241
Keystone	182	187	197	204	193	200	263	284
Lake	249	252	251	255	243	246	259	263
West	244	246	246	249	240	242	252	256
Ralston	249	252	251	255	243	246	259	264
Washington	234	236	235	237	232	233	239	241
Sutro	267	272	271	278	257	261	285	294
Morrill	224	224	224	224	223	223	224	224
Vine	236	237	237	239	233	234	241	243
Evans	0	275	0	280	0	264	0	298

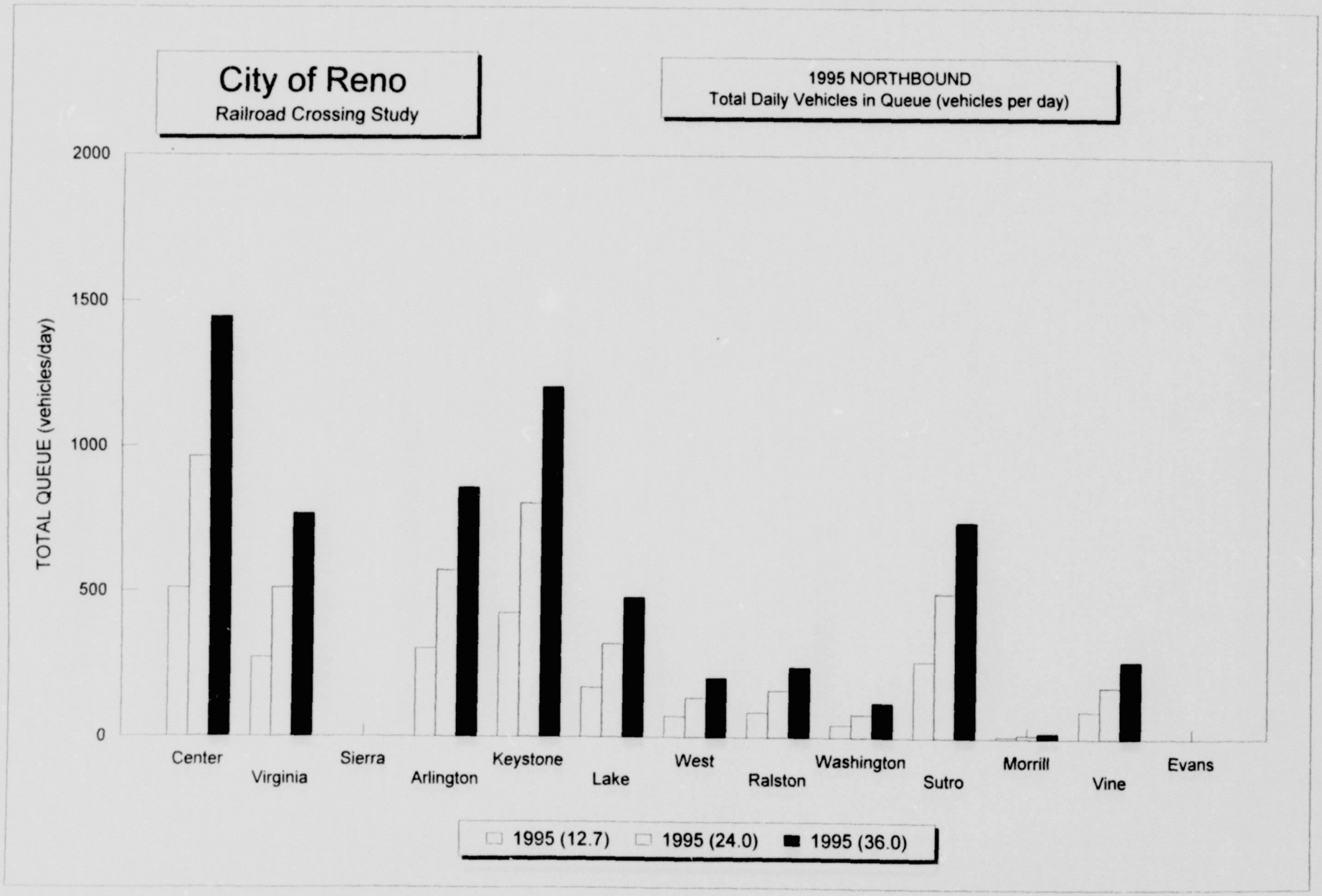

City of Reno
Railroad Delay Study
AM Peak Northbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 Traffic Volume
2000 Traffic Volume

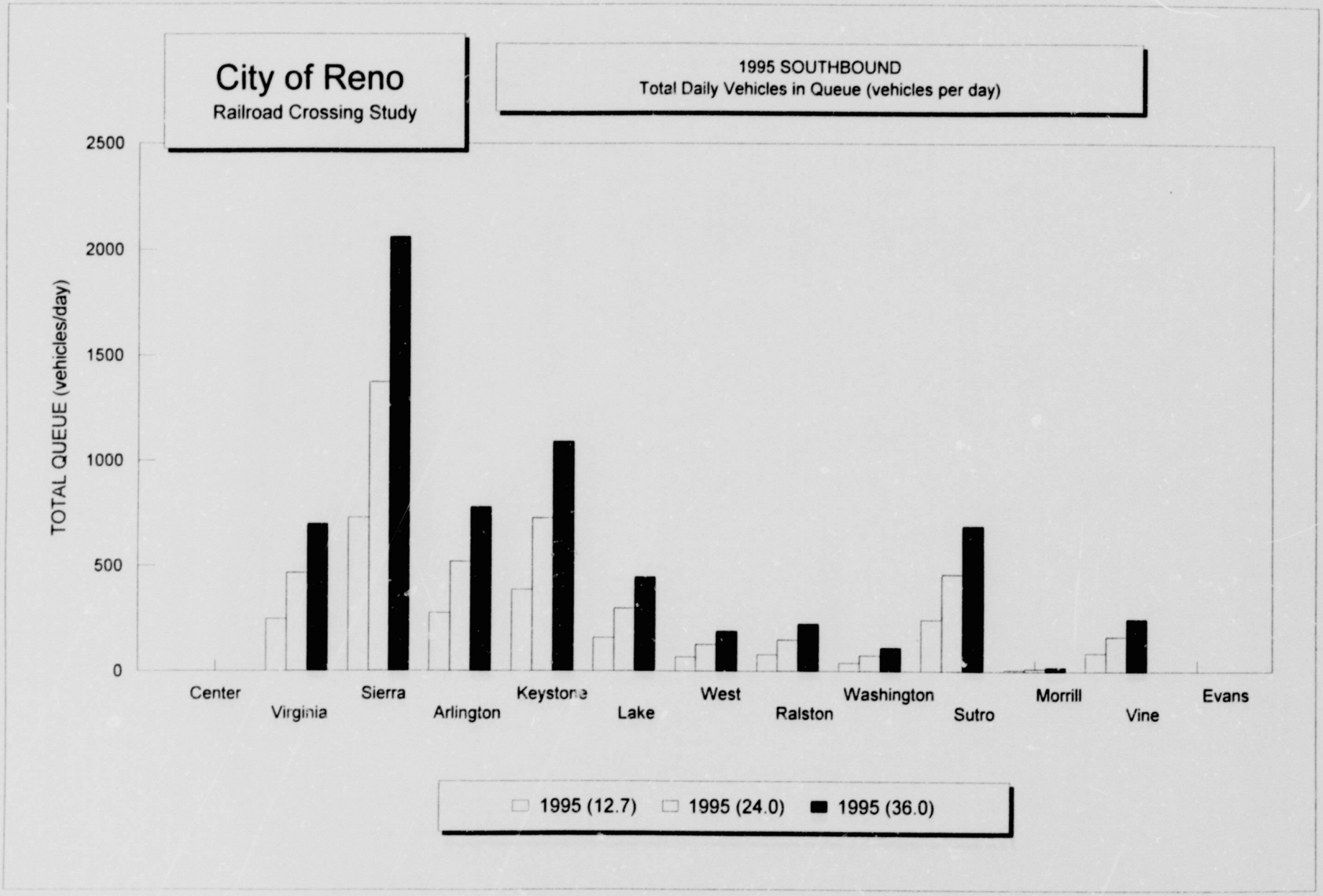

City of Reno
Railroad Delay Study
AM Peak Southbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 Traffic Volume
2000 Traffic Volume

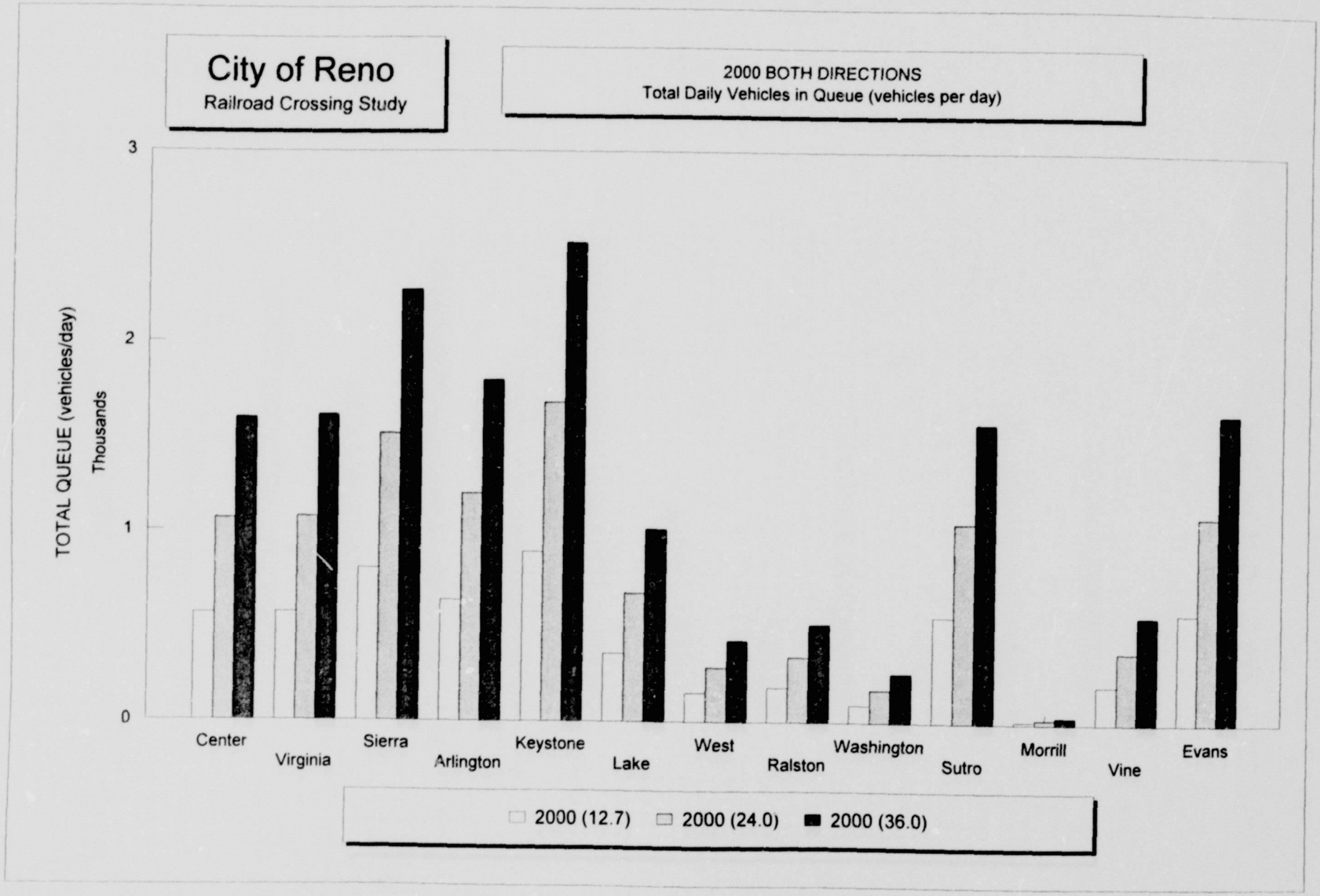

City of Reno
Railroad Delay Study
PM Peak Northbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
120
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 Traffic Volume
2000 Traffic Volume


City of Reno
Railroad Delay Study
PM Peak Southbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 Traffic Volume
2000 Traffic Volume


City of Reno
Railroad Crossing Study
1995 BOTH DIRECTIONS
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2500
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 (12.7)
1995 (24.0)
1995 (36.0)

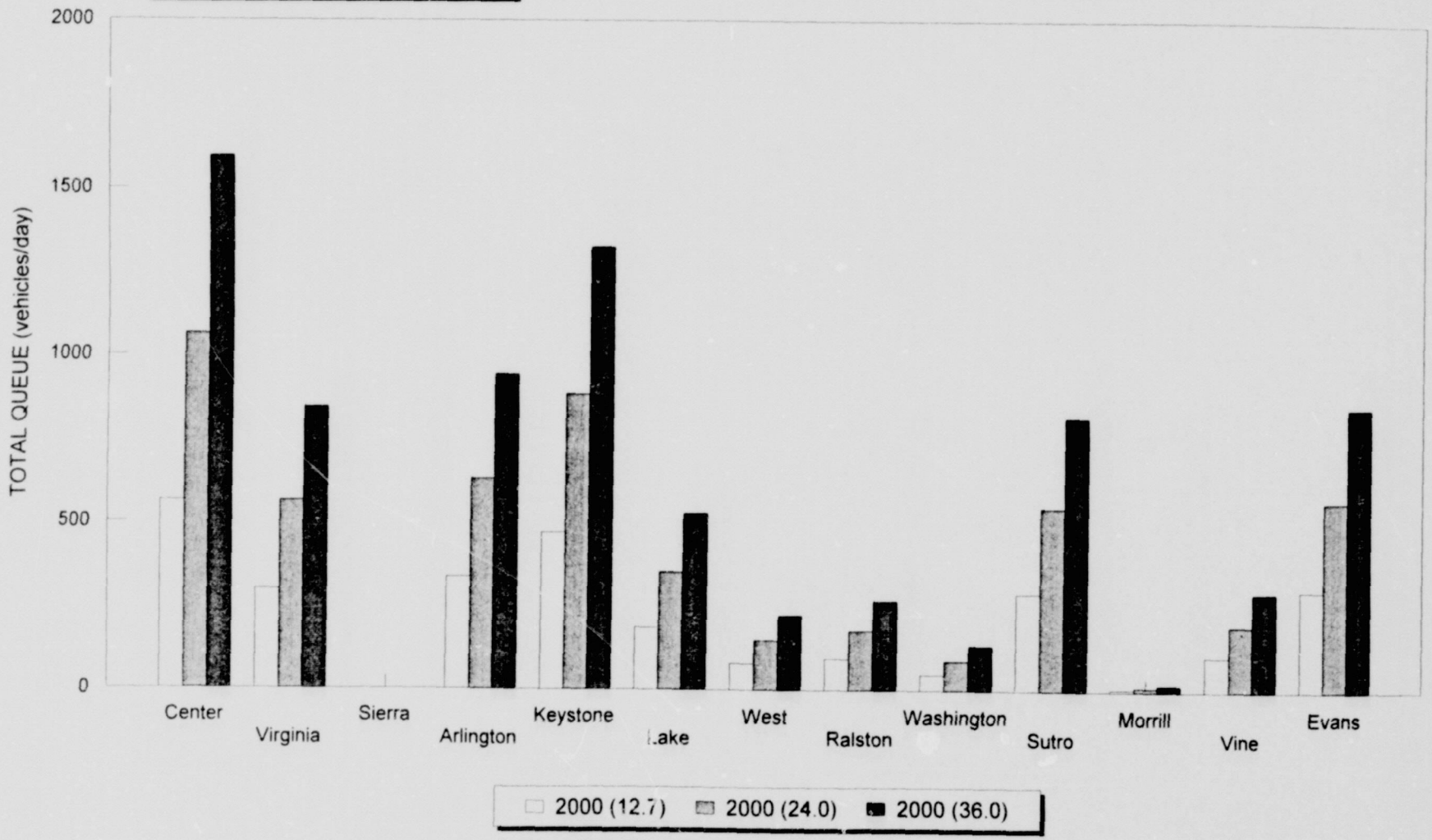

City of Reno
Railroad Crossing Study
1995 NORTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 (12.7)
1995 (24.0)
1995 (36.0)

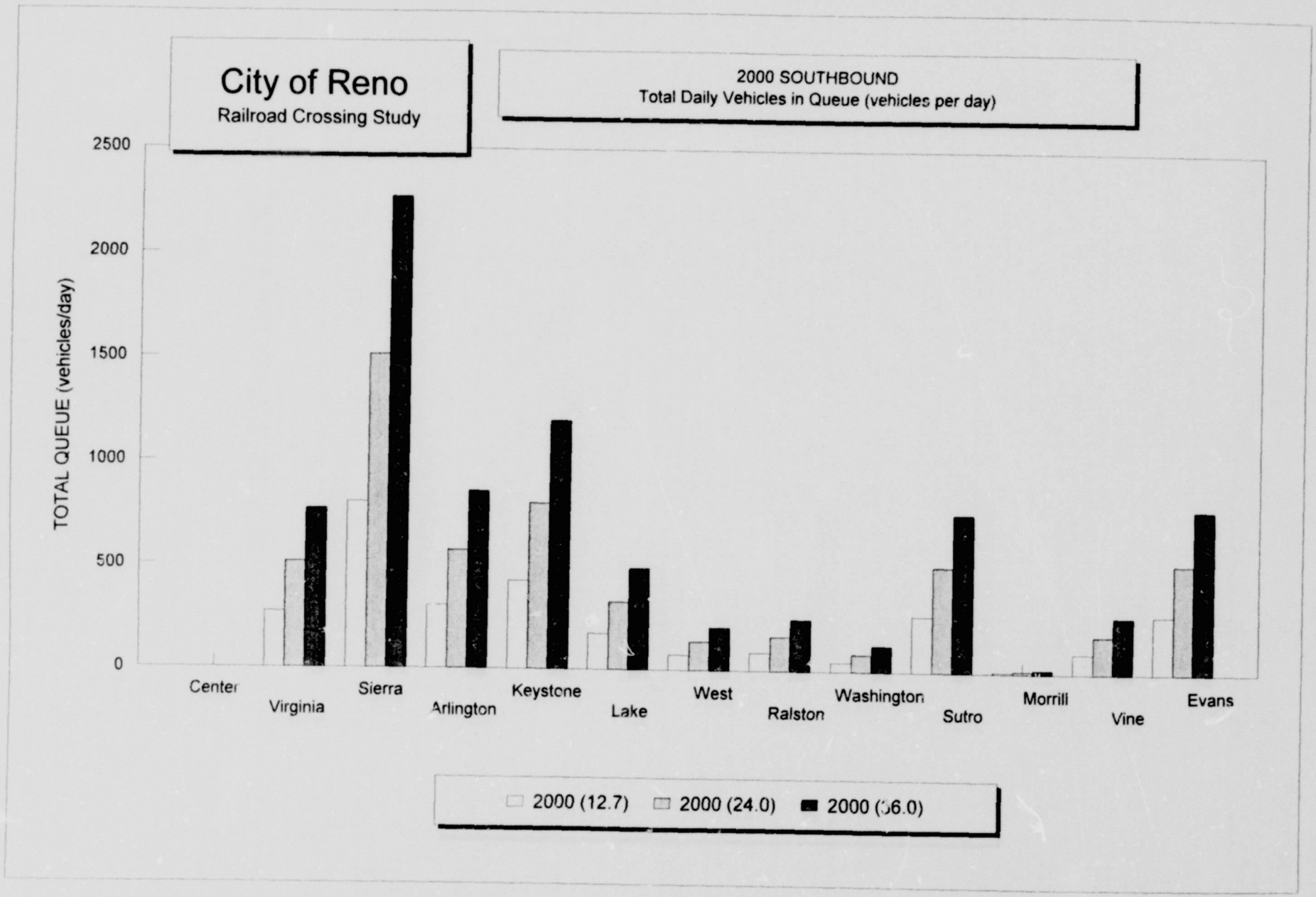

City of Reno
Railroad Crossing Study
1995 SOUTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2500
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 (12.7)
1995 (24.0)
1995 (36.0)


City of Reno
Railroad Crossing Study
2000 BOTH DIRECTIONS
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
Thousands
3
2
1
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2000 (12.7)
2000 (24.0)
2000 (36.0)

City of Reno
Railroad Crossing Study

2000 NORTHBOUND
Total Daily Vehicles in Queue (vehicles per day)




City of Reno
Railroad Crossing Study
2000 SOUTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2500
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2000 (12.7)
2000 (24.0)
2000 (36.0)

QUEUE SUMMARY

Total Queue Per Peak Period - NORTHBOUND

	AM Peak						PM Peak						Off Peak						Total					
Year	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	59	111	167	62	118	176	223	421	631	236	445	668	321	607	911	340	643	964	603	1139	1708	638	1206	1808
Virginia	34	64	96	36	69	103	72	136	204	78	147	221	213	402	603	230	434	651	319	602	904	344	650	975
Sierra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington	46	87	130	49	93	140	79	150	225	85	161	242	231	436	654	249	470	706	356	673	1009	384	725	1088
Keystone	58	109	164	62	118	177	107	202	302	115	218	327	335	634	951	362	685	1027	500	944	1417	540	1021	1531
Lake	31	58	87	33	62	94	53	101	151	57	108	163	115	217	325	124	234	351	199	375	563	214	405	607
West	13	24	37	14	27	40	22	42	64	25	46	70	48	91	137	53	100	150	84	158	237	92	173	259
Ralston	15	29	44	17	32	48	27	51	76	29	55	83	58	110	165	63	119	179	100	190	285	109	207	310
Washington	8	15	22	8	16	23	13	25	38	14	27	41	29	55	82	31	59	88	50	95	142	54	101	152
Sutro	47	90	135	51	97	145	83	156	234	89	168	253	178	336	505	192	363	545	308	582	873	333	628	943
Morrill	1	2	3	1	2	3	2	3	5	2	3	5	4	7	11	4	7	11	7	13	19	7	13	19
Vine	17	32	48	18	34	52	29	55	83	32	60	90	63	119	179	68	129	194	109	207	310	118	224	335
Evans	49	93	140	53	100	150	83	156	234	92	174	261	178	336	505	199	375	563	310	585	878	344	650	975
Total	377	713	1070	406	768	1152	793	1498	2247	854	1615	2422	1774	3352	5028	1915	3619	5428	2944	5563	8345	3176	6001	9002

Total Queue Per Peak Period - SOUTHBOUND

	AM Peak						PM Peak						Off Peak						Total					
Year	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia	28	52	78	30	56	85	88	167	250	95	180	270	174	329	494	188	355	532	290	548	822	313	591	887
Sierra	100	188	282	108	203	305	213	402	603	230	435	653	544	1028	1542	589	1112	1669	856	1619	2428	927	1751	2627
Arlington	38	71	106	40	76	115	97	183	274	104	197	296	189	357	535	204	385	577	323	611	916	349	659	988
Keystone	47	89	134	51	96	145	130	246	370	141	266	399	274	519	778	297	560	841	452	854	1281	488	923	1385
Lake	25	47	71	27	51	77	65	123	184	70	133	199	94	177	266	101	191	287	184	348	522	198	375	563
West	11	20	30	12	22	33	27	52	78	30	57	85	40	75	112	43	82	123	78	147	220	85	160	240
Ralston	13	24	36	14	26	39	33	62	93	36	68	102	47	90	135	52	98	147	93	176	264	101	191	287
Washington	6	12	18	7	13	19	16	31	47	18	33	50	24	45	67	25	48	72	47	88	132	50	94	141
Sutro	39	73	110	42	79	119	101	191	286	109	206	309	146	275	413	157	297	446	285	539	809	308	582	873
Morrill	1	2	2	1	2	2	2	4	6	2	4	6	3	6	9	3	6	9	6	12	18	6	12	18
Vine	14	26	39	15	28	42	36	68	102	39	73	110	52	98	147	56	106	159	101	191	287	110	207	311
Evans	40	78	114	43	82	123	101	191	286	113	213	319	146	275	413	163	307	461	287	542	813	318	602	903
Total	350	681	1021	389	735	1103	910	1719	2579	987	1864	2797	1732	3274	4911	1877	3547	5321	3002	5674	8511	3253	6147	9221

TOTAL DAILY QUEUE

	AM Peak						PM Peak						Off Peak						TOTAL DAILY QUEUE					
Year	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Trains/Day	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24.0	36.0	12.7	24.0	36.0
Trains/Peak	1.0	1.9	2.9	1.0	1.9	2.9	2.2	4.1	6.1	2.2	4.1	6.1	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0	9.5	18.0	27.0
Center	59	111	167	62	118	176	223	421	631	236	445	668	321	607	911	340	643	964	603	1139	1708	638	1206	1808
Virginia	61	116	174	66	125	188	160	303	454	173	327	490	387	731	1097	417	789	1183	609	1150	1726	657	1241	1861
Sierra	100	188	282	108	203	305	213	402	603	230	435	653	544	1028	1542	589	1112	1669	856	1619	2428	927	1751	2627
Arlington	83	158	236	90	170	255	176	333	499	190	359	538	420	793	1190	453	856	1283	679	1284	1925	732	1384	2076
Keystone	105	198	297	113	214	321	237	448	672	256	484	726	610	1152	1728	659	1245	1868	952	1798	2698	1029	1944	2916
Lake	56	105	158	60	113	170	118	224	335	128	241	362	209	394	592	225	425	638	383	723	1085	413	780	1170
West	23	44	66	26	48	73	50	94	141	54	103	154	88	166	249	96	182	273	161	305	457	176	333	500
Ralston	28	53	80	31	58	87	60	113	170	65	123	185	106	199	299	115	217	326	193	366	548	211	398	597
Washington	14	27	40	15	28	43	30	57	85	32	60	90	53	100	150	56	106	160	97	183	274	103	195	293
Sutro	86	163	245	93	176	264	183	347	520	198	374	561	324	612	917	349	660	991	593	1121	1682	641	1211	1816
Morrill	2	4	5	2	4	5	4	8	11	4	8	11	7	13	20	7	13	20	13	24	37	13	24	37
Vine	31	58	87	33	63	94	65	123	185	70	133	200	115	217	326	124	235	352	211	398	597	228	431	646
Evans	90	169	254	96	182	274	183	347	520	205	387	580	324	612	917	361	683	1024	597	1127	1691	662	1252	1877
TOTAL	738	1394	2091	795	1503	2255	1703	3218	4826	1841	3479	5219	3506	6626	9938	3792	7166	10749	5946	11237	16856	6429	12149	18223

Time when Queue Dissipates (sec)

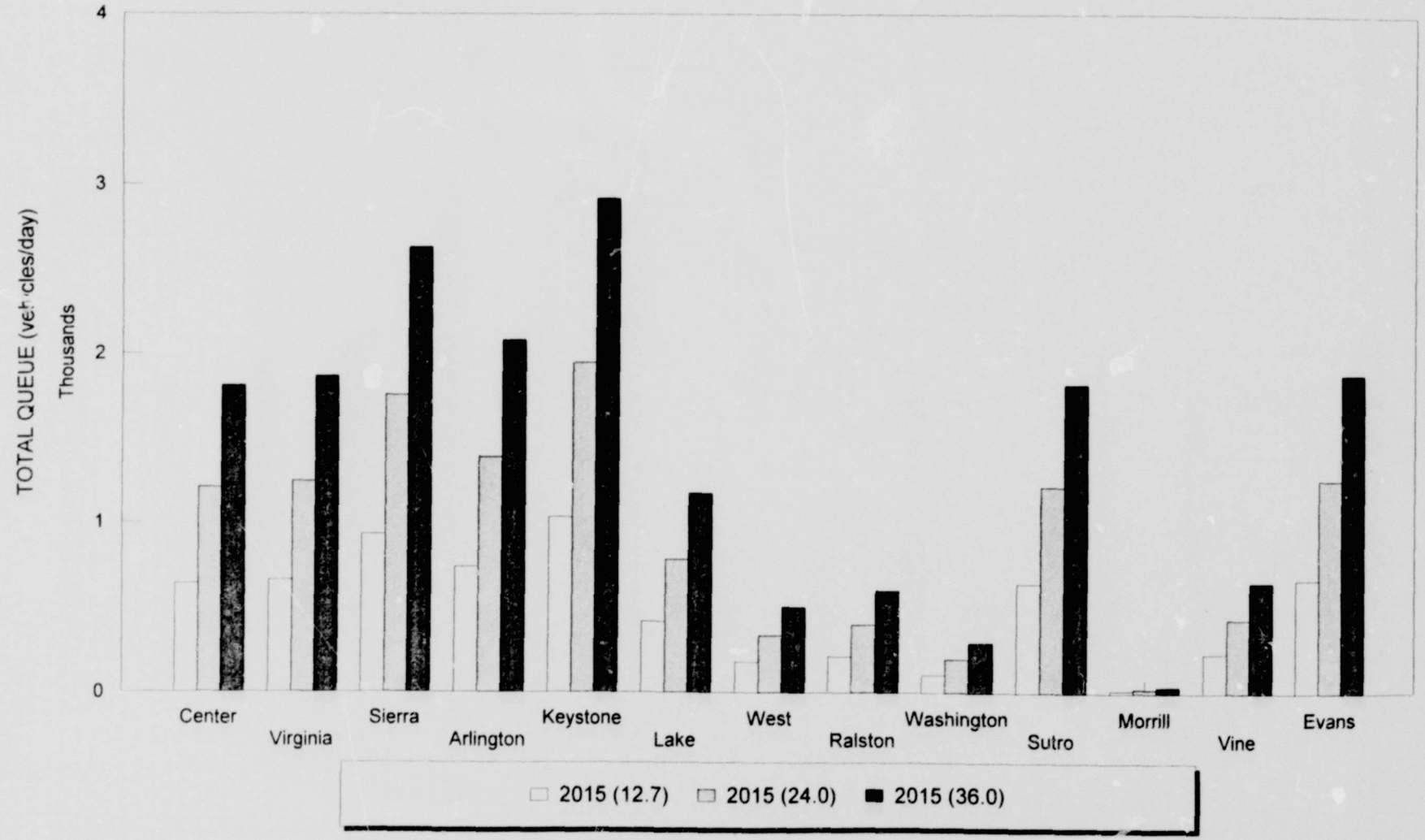
	Northbound - AM		Northbound - PM		Southbound - AM		Southbound - PM	
	2007	2015	2007	2015	2007	2015	2007	2015
Center	200	204	397	408	0	0	0	0
Virginia	173	178	218	224	132	132	162	245
Sierra	0	0	0	0	184	187	228	365
Arlington	222	229	228	235	269	284	341	260
Keystone	191	196	208	215	187	192	237	328
Lake	254	257	257	261	285	292	371	271
West	248	251	251	254	248	250	267	263
Ralston	255	258	258	262	243	245	259	273
Washington	237	238	238	240	248	251	268	244
Sutro	277	282	283	289	234	235	242	310
Morrill	224	224	224	224	265	269	301	224
Vine	238	240	240	242	223	223	224	247
Evans	279	285	283	292	235	237	244	314

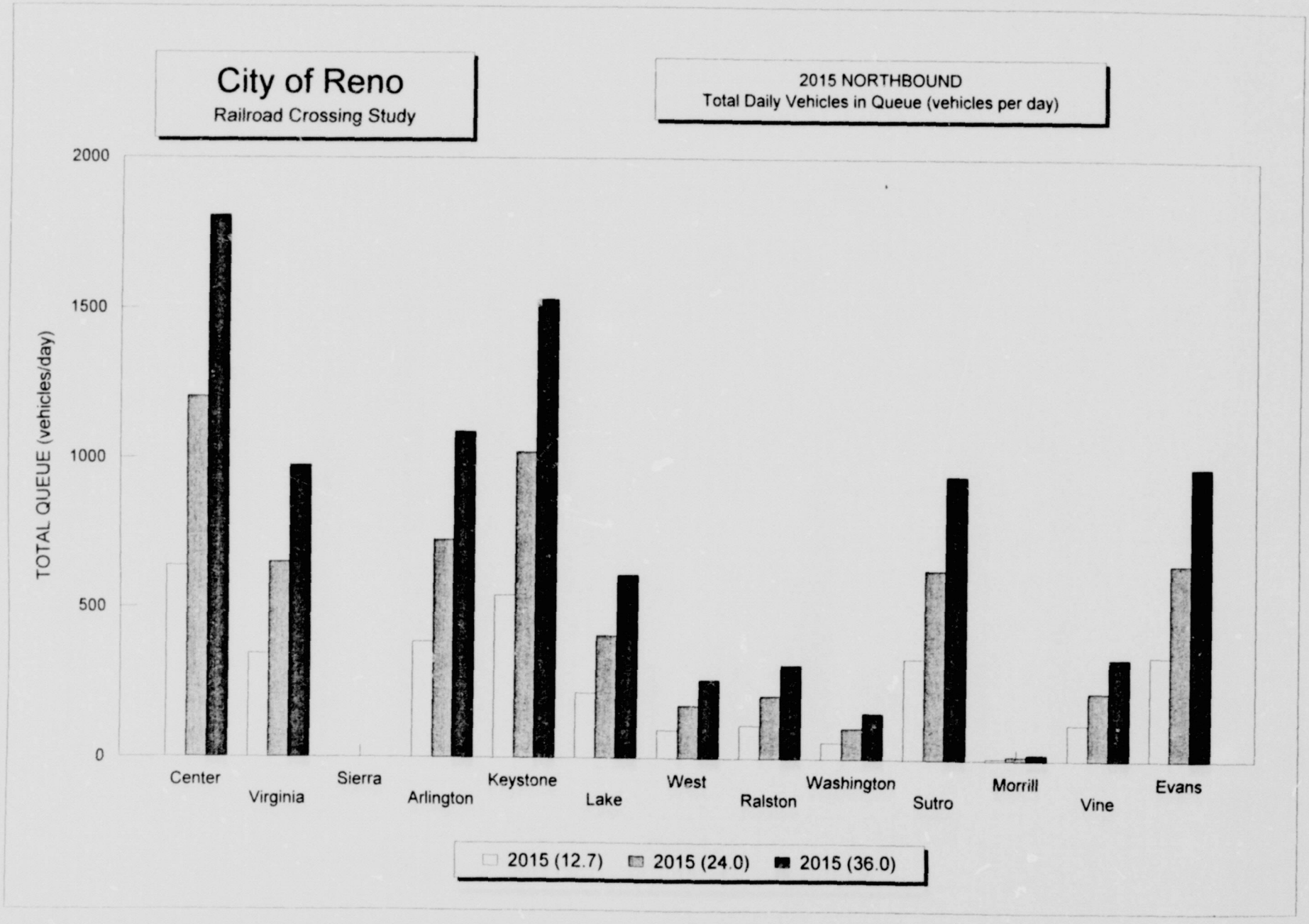
STB FD 32760 10-17-97 K 7/15

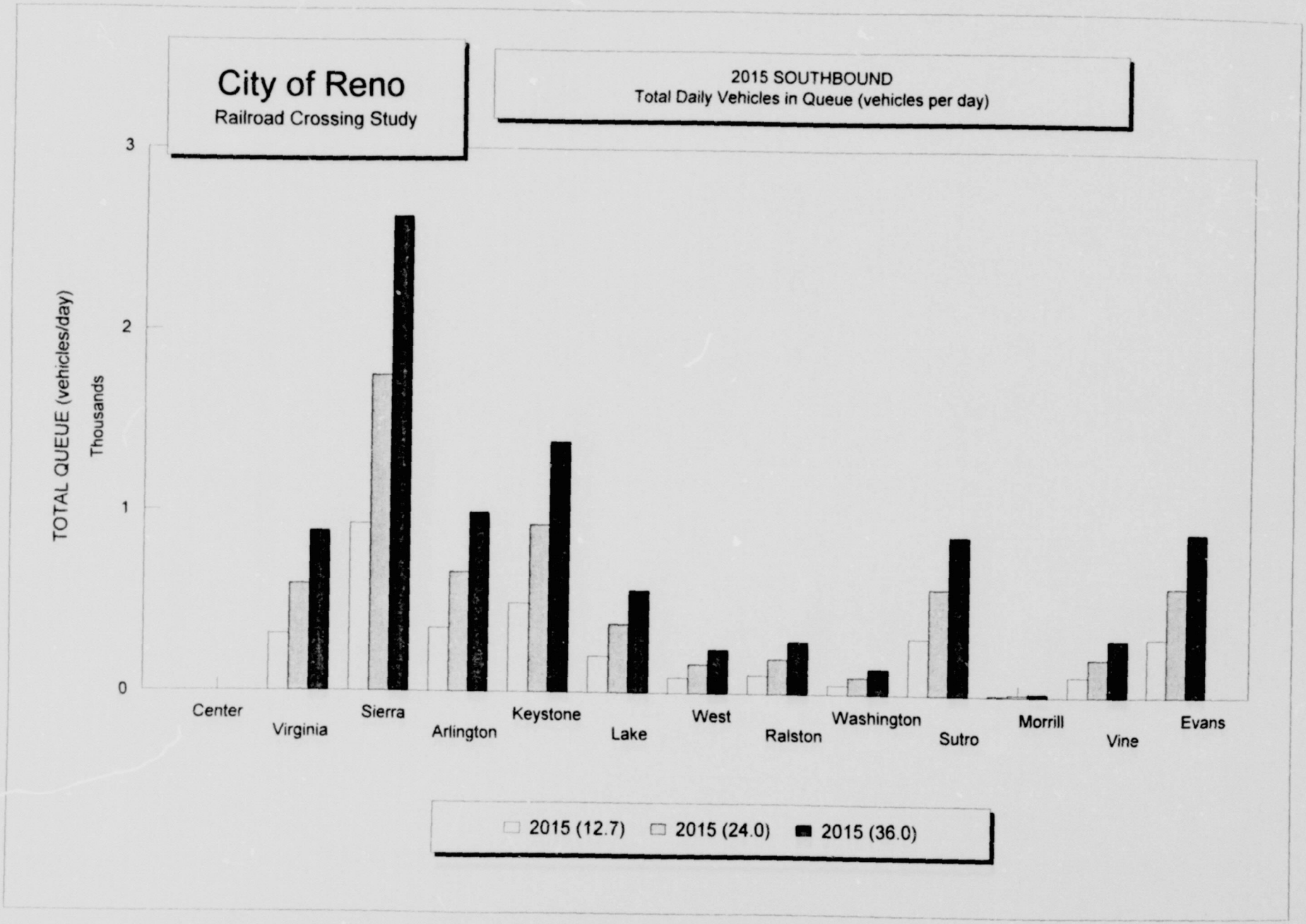
City of Reno

Railroad Crossing Study

2015 BOTH DIRECTIONS
Total Daily Vehicles in Queue (vehicles per day)



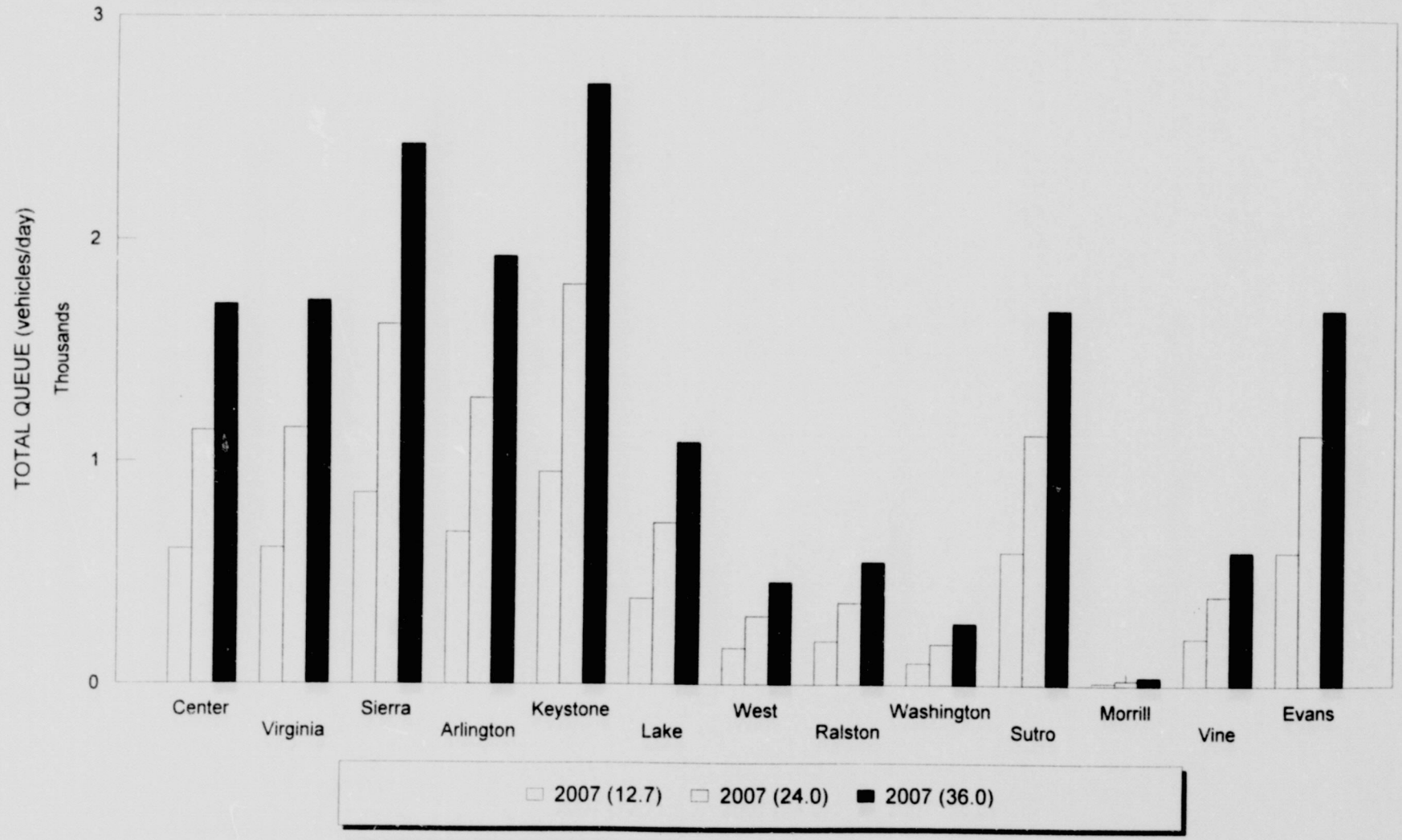

City of Reno
Railroad Crossing Study
2015 NORTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)

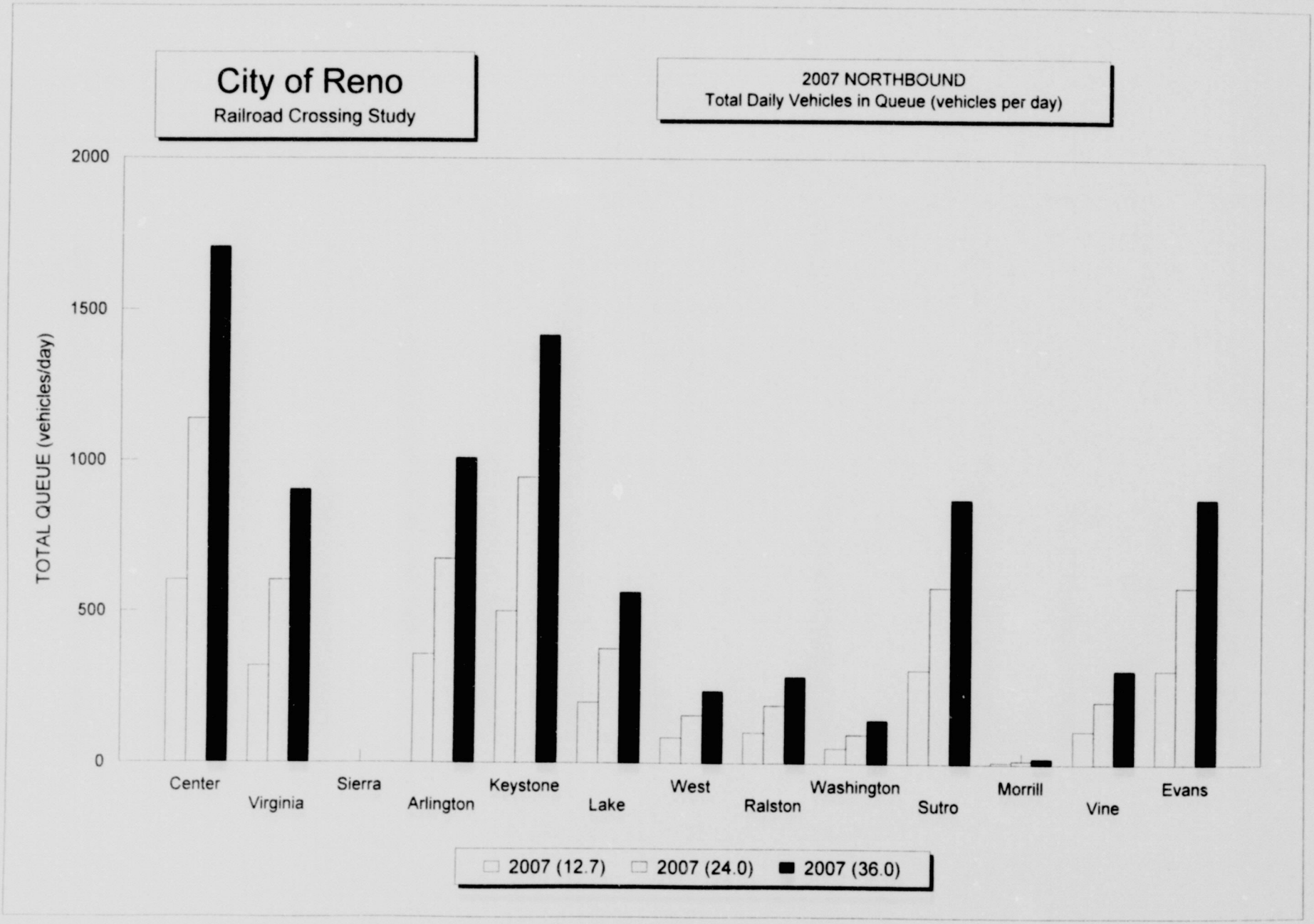

City of Reno
Railroad Crossing Study
2015 SOUTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
Thousands
3
2
1
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)

City of Reno

Railroad Crossing Study

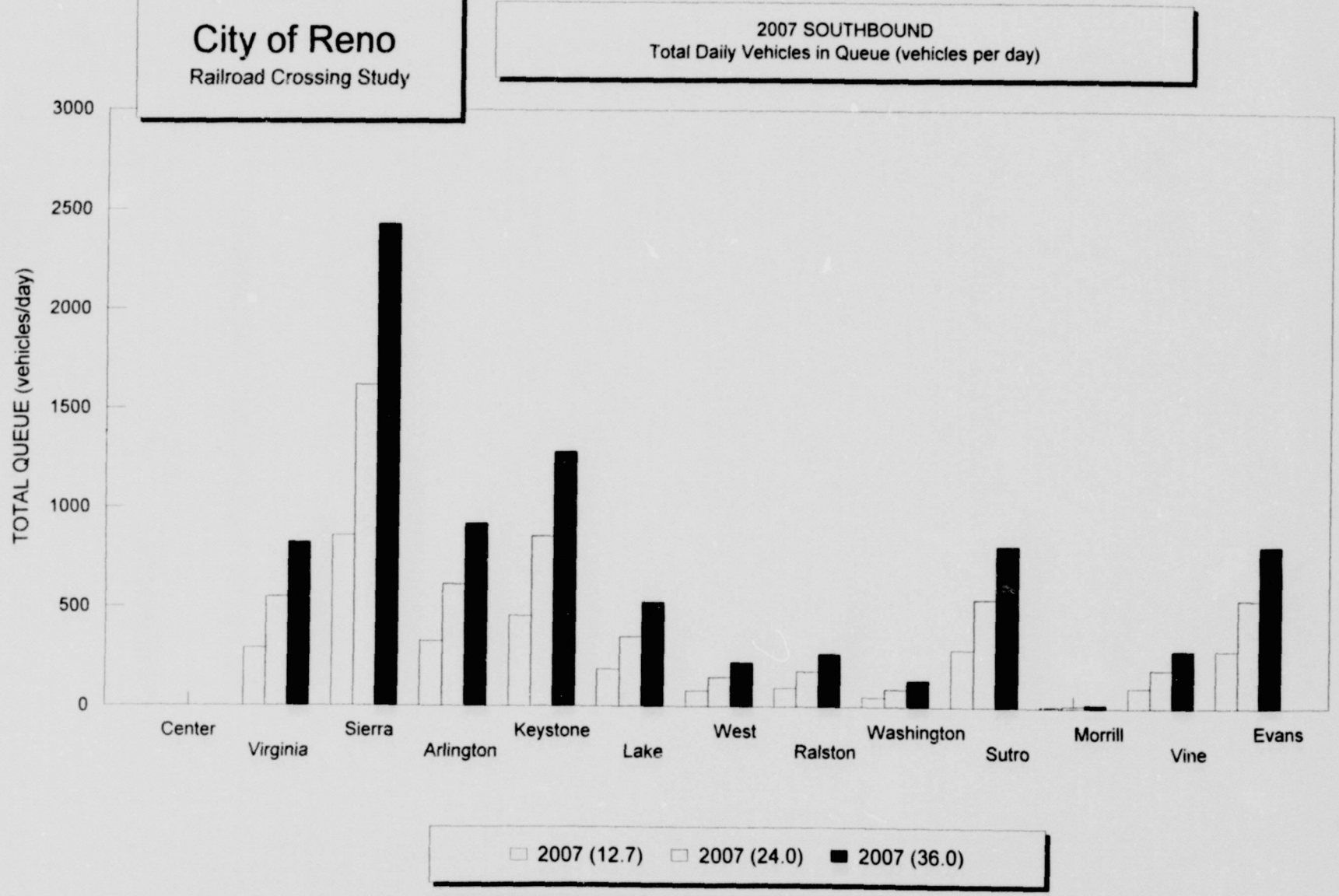
2007 BOTH DIRECTIONS
Total Daily Vehicles in Queue (vehicles per day)




City of Reno
Railroad Crossing Study
2007 NORTHBOUND
Total Daily Vehicles in Queue (vehicles per day)
TOTAL QUEUE (vehicles/day)
2000
1500
1000
500
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

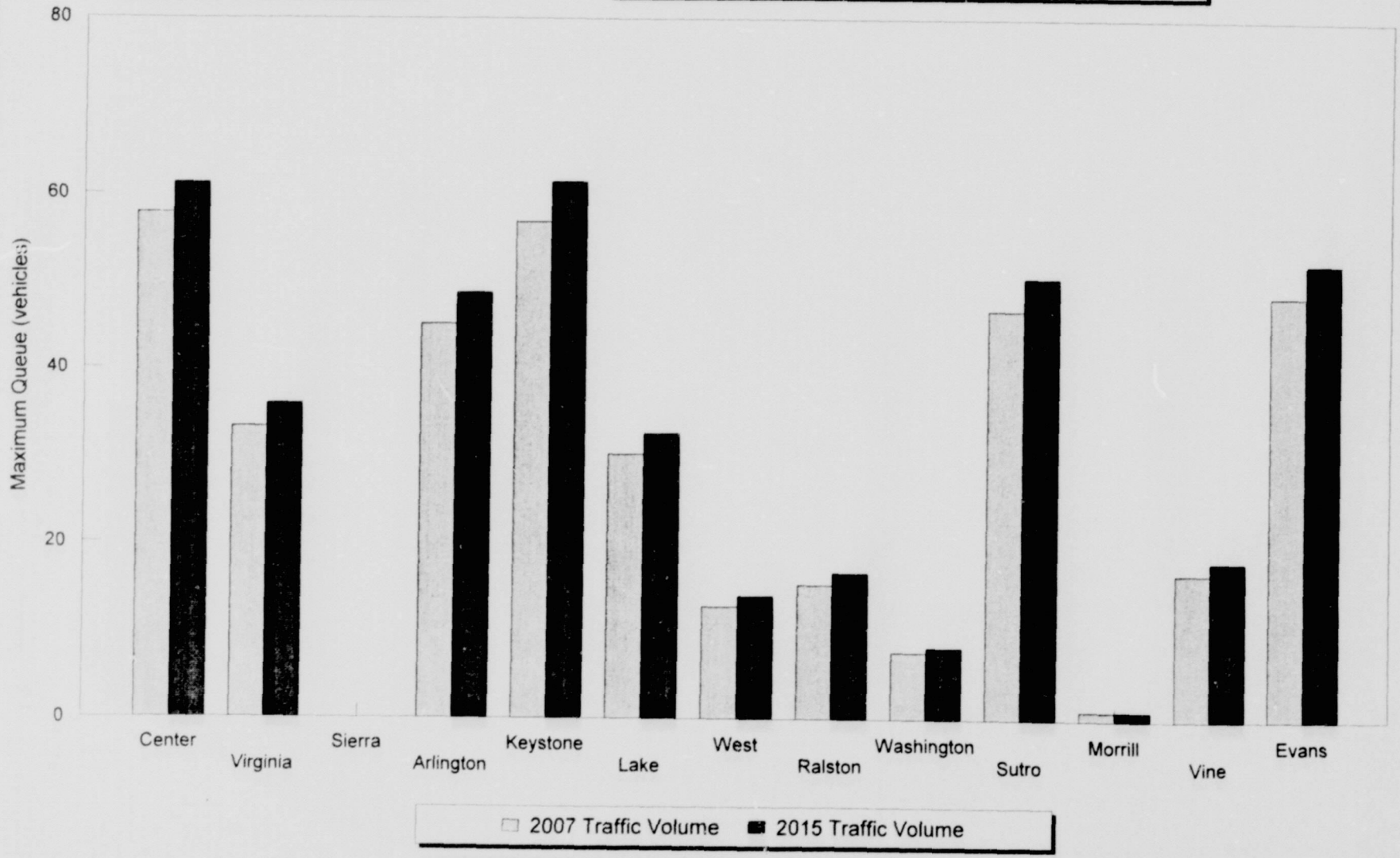
City of Reno

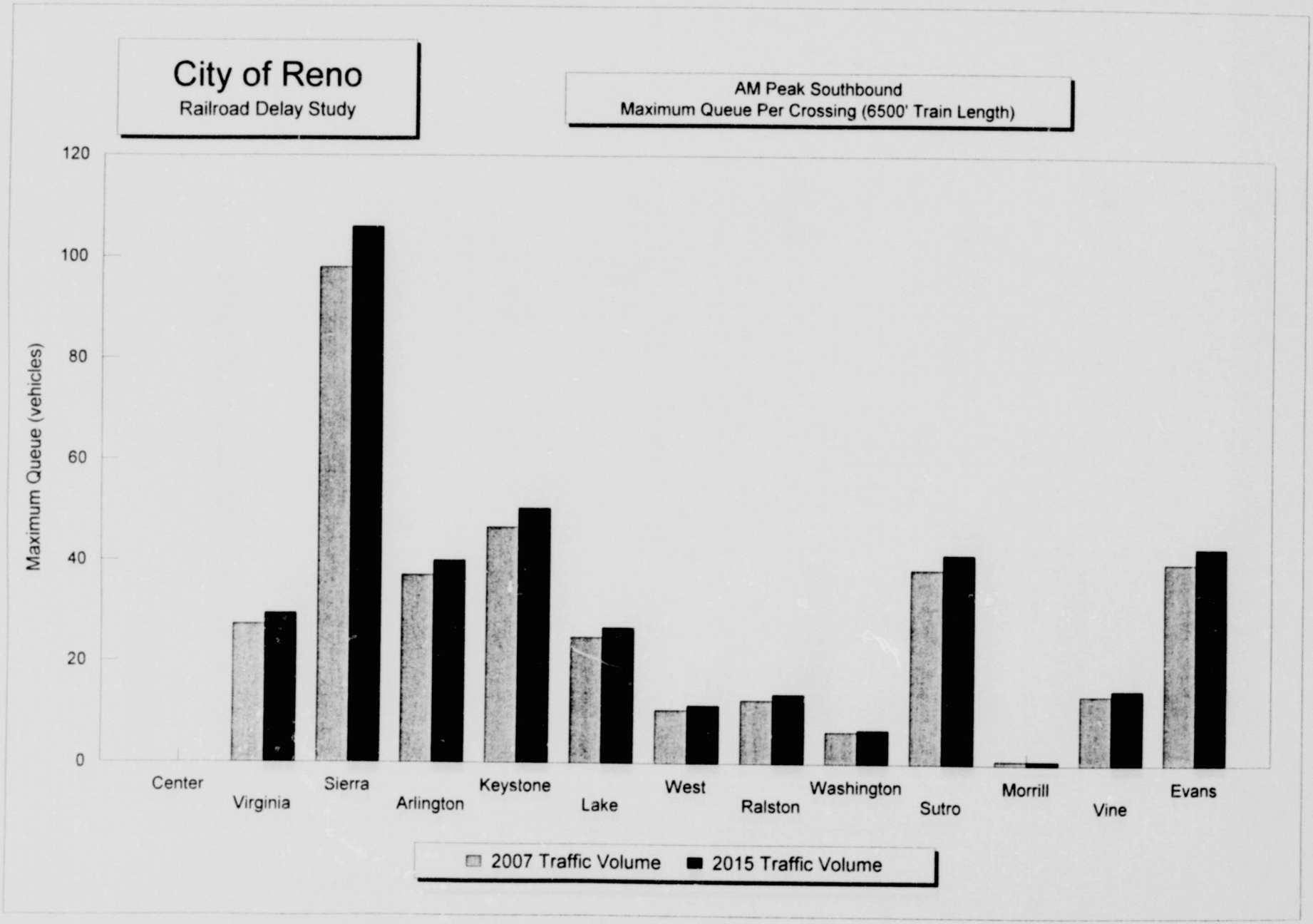
Railroad Crossing Study

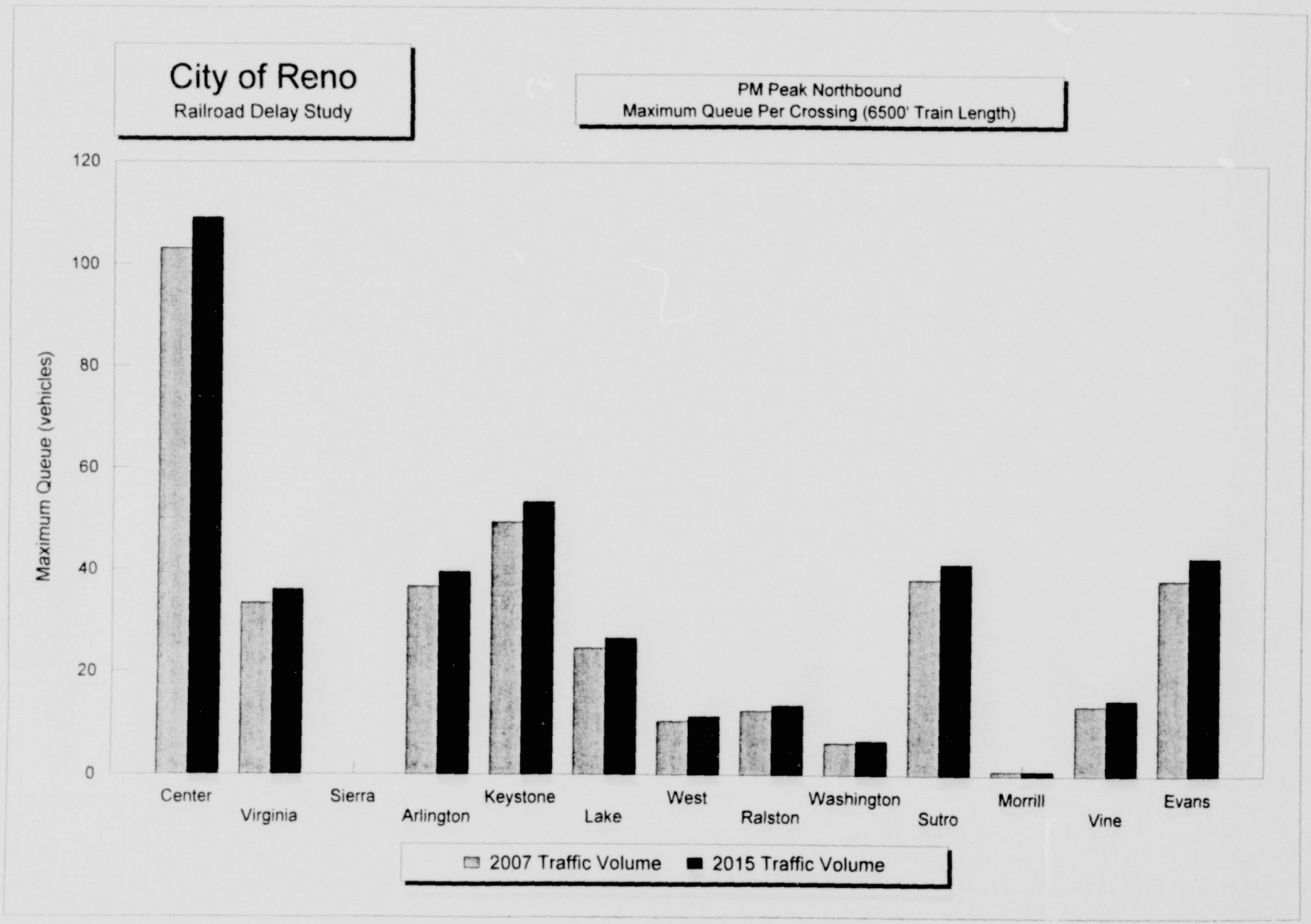


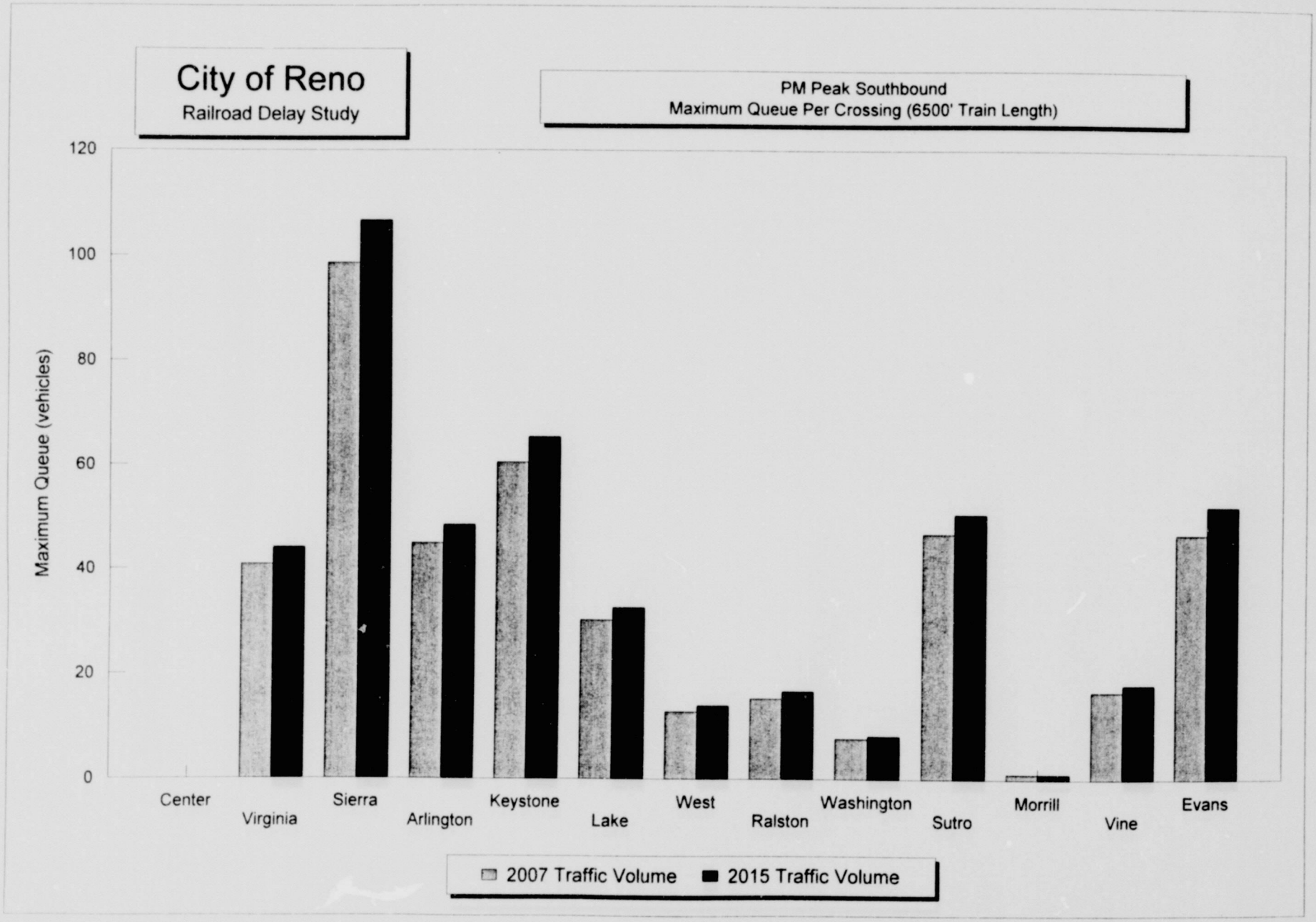
City of Reno
Railroad Delay Study

AM Peak Northbound
Maximum Queue Per Crossing (6500' Train Length)




City of Reno
Railroad Delay Study
AM Peak Southbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
120
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 Traffic Volume
2015 Traffic Volume


City of Reno
Railroad Delay Study
PM Peak Northbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
120
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 Traffic Volume
2015 Traffic Volume


City of Reno
Railroad Delay Study
PM Peak Southbound
Maximum Queue Per Crossing (6500' Train Length)
Maximum Queue (vehicles)
120
100
80
60
40
20
0
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 Traffic Volume
2015 Traffic Volume

APPENDIX I
AIR QUALTITYAND EMISSION ANALYSIS RESULTS

- 1995
- 2000
- 2007
- 2015

EMISSION FACTORS

	CO	NOx	ROG
DECEL	0.00177	0.00256	0.00119
ACCEL	0.06781	0.02178	0.01155
IDLE	0.00191	0.00124	0.00120
CRUISE	0.00488	0.00945	0.00334

Start up Decel Time	7.09
Start up Accel Time	7.5

CITY OF RENO - RAILROAD DELAY STUDY
TOTAL EMISSIONS PER PEAK
(grams)

	AM PEAK						PM PEAK						OFFPEAK						TOTAL					
	1995 12.70	1995 24.00	1995 36.00	2000 12.70	2000 24.00	2000 36.00	1995 12.7	1995 24.0	1995 36.0	2000 12.7	2000 24.0	2000 36.0	1995 12.7	1995 24.0	1995 36.0	2000 12.7	2000 24.0	2000 36.0	1995 12.7	1995 24.0	1995 36.0	2000 12.7	2000 24.0	2000 36.0
Center	60	114	171	67	127	191	303	572	858	341	644	966	360	681	1021	399	754	1131	723	1367	2051	807	1525	2288
Virginia	60	114	170	67	126	189	255	482	723	292	553	829	628	1186	1780	696	1316	1974	993	1877	2815	1113	2103	3154
Sierra	110	208	312	124	234	352	192	364	545	214	405	608	472	892	1338	520	983	1475	753	1423	2134	833	1574	2361
Arlington	88	167	251	98	185	278	263	498	747	296	560	840	690	1304	1957	762	1440	2160	1061	2008	3009	1178	2227	3340
Keystone	108	203	305	120	226	339	137	258	387	150	284	427	231	437	656	254	480	720	431	815	1222	474	896	1344
Lake	63	120	179	70	132	197	57	108	162	63	119	178	97	184	276	107	202	303	181	342	513	199	375	563
West	27	50	75	29	55	83	68	129	193	76	144	216	116	218	328	128	243	364	215	407	611	240	453	680
Ralston	32	60	90	35	67	100	33	62	93	37	70	104	57	107	161	64	120	181	105	198	297	118	222	334
Washington	15	29	43	17	33	49	219	413	620	244	461	692	360	681	1022	399	753	1130	680	1284	1926	754	1425	2137
Sutro	100	189	284	111	211	316	5	10	15	5	10	15	9	17	26	9	17	26	17	31	47	17	31	47
Morrill	2	5	7	2	5	7	73	139	208	81	153	229	127	240	360	140	264	396	235	443	665	258	488	732
Vine	34	65	97	38	71	107	0	0	0	254	481	721	0	0	0	414	782	1173	0	0	0	784	1482	2224
Evans	0	0	0	116	220	330	1778	3360	5040	2247	4246	6369	3582	6768	10153	4370	8258	12388	6060	11453	17179	7512	14195	21293
TOTAL	701	1324	1986	895	1691	2536																		

EMISSIONS PER CROSSING
1995 SUMMARY
12.7 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	59	38	140	0	0	0	59	38	140	12.70	1.02	9.53	2.16	60.44	360.31	302.74
Virginia	33	25	35	26	20	44	59	46	80	12.70	1.02	9.53	2.16	60.11	433.58	172.40
Sierra	0	0	0	108	66	118	108	66	118	12.70	1.02	9.53	2.16	110.21	627.81	255.19
Arlington	48	27	40	39	22	50	87	50	89	12.70	1.02	9.53	2.16	88.45	472.04	192.40
Keystone	58	40	52	48	33	70	106	72	122	12.70	1.02	9.53	2.16	107.61	690.28	263.49
Lake	34	13	28	28	11	35	62	24	63	12.70	1.02	9.53	2.16	63.28	231.32	136.50
West	14	6	12	12	5	15	26	10	26	12.70	1.02	9.53	2.16	26.55	97.48	57.11
Ralston	17	7	14	14	5	17	31	12	32	12.70	1.02	9.53	2.16	31.62	115.58	68.20
Washington	8	3	7	7	3	8	15	6	15	12.70	1.02	9.53	2.16	15.33	56.80	32.79
Sutro	55	21	45	44	17	56	99	38	101	12.70	1.02	9.53	2.16	100.28	360.50	218.73
Morrill	1	1	1	1	0	1	2	1	2	12.70	1.02	9.53	2.16	2.41	9.03	5.13
Vine	19	7	15	15	6	19	34	13	34	12.70	1.02	9.53	2.16	34.29	126.90	73.42
Evans	0	0	0	0	0	0	0	0	0	12.70	1.02	9.53	2.16	0.00	0.00	0.00
TOTAL	347	188	389	342	188	434	690	376	824					700.58	3581.64	1778.12

EMISSIONS PER CROSSING
2000 SUMMARY
12.7 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	OFF	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	66	42	158	0	0	0	66	42	158	12.70	1.02	9.53	2.16	67.31	399.04	340.68
Virginia	36	28	39	29	23	50	65	51	89	12.70	1.02	9.53	2.16	66.60	478.45	192.01
Sierra	0	0	0	122	73	135	122	73	135	12.70	1.02	9.53	2.16	124.04	696.24	292.43
Arlington	54	30	44	43	24	55	97	55	99	12.70	1.02	9.53	2.16	98.07	520.42	214.40
Keystone	64	44	57	54	36	80	118	80	137	12.70	1.02	9.53	2.16	119.59	762.15	296.50
Lake	38	15	31	31	12	39	69	27	70	12.70	1.02	9.53	2.16	69.64	253.86	150.48
West	16	6	13	13	5	16	29	11	29	12.70	1.02	9.53	2.16	29.14	106.75	62.77
Ralston	19	7	16	16	6	20	35	13	35	12.70	1.02	9.53	2.16	35.26	128.49	76.21
Washington	9	4	8	8	3	9	17	7	17	12.70	1.02	9.53	2.16	17.21	63.68	36.85
Sutro	61	23	50	49	19	63	110	42	113	12.70	1.02	9.53	2.16	111.45	398.53	244.02
Morrill	1	1	1	1	0	1	2	1	2	12.70	1.02	9.53	2.16	2.41	9.03	5.13
Vine	20	8	17	17	7	21	37	15	37	12.70	1.02	9.53	2.16	37.78	139.60	80.96
Evans	63	24	52	51	19	66	114	43	118	12.70	1.02	9.53	2.16	116.28	413.81	254.33
TOTAL	448	231	486	432	228	554	881	459	1041					894.76	4370.04	2246.76

EMISSIONS PER CROSSING
1995 SUMMARY
24 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	59	38	140	0	0	0	59	38	140	24.00	1.92	18.00	4.08	114.22	680.91	572.11
Virginia	33	25	35	26	20	44	59	46	80	24.00	1.92	18.00	4.08	113.60	819.36	325.79
Sierra	0	0	0	108	66	118	108	66	118	24.00	1.92	18.00	4.08	208.27	1186.42	482.25
Arlington	48	27	40	39	22	50	87	50	89	24.00	1.92	18.00	4.08	167.14	892.05	363.60
Keystone	58	40	52	48	33	70	106	72	122	24.00	1.92	18.00	4.08	203.36	1304.46	497.94
Lake	34	13	28	28	11	35	62	24	63	24.00	1.92	18.00	4.08	119.58	437.15	257.95
West	14	6	12	12	5	15	26	10	26	24.00	1.92	18.00	4.08	50.17	184.21	107.93
Ralston	17	7	14	14	5	17	31	12	32	24.00	1.92	18.00	4.08	59.75	218.43	128.89
Washington	8	3	7	7	3	8	15	6	15	24.00	1.92	18.00	4.08	28.97	107.34	61.97
Sutro	55	21	45	44	17	56	99	38	101	24.00	1.92	18.00	4.08	189.50	681.25	413.36
Morrill	1	1	1	1	0	1	2	1	2	24.00	1.92	18.00	4.08	4.56	17.07	9.70
Vine	19	7	15	15	6	19	34	13	34	24.00	1.92	18.00	4.08	64.81	239.80	138.76
Evans	0	0	0	0	0	0	0	0	0	24.00	1.92	18.00	4.08	0.00	0.00	0.00
TOTAL	347	188	389	342	188	434	690	376	824					1323.92	6768.45	3360.23

EMISSIONS PER CROSSING
2000 SUMMARY
24 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	66	42	158	0	0	0	66	42	158	24.00	1.92	18.00	4.08	127.20	754.09	643.80
Virginia	36	28	39	29	23	50	66	50	89	24.00	1.92	18.00	4.08	125.85	904.17	362.86
Sierra	0	0	0	122	73	135	122	73	135	24.00	1.92	18.00	4.08	234.40	1315.72	552.62
Arlington	54	30	44	43	24	55	97	55	99	24.00	1.92	18.00	4.08	185.33	983.47	405.16
Keystone	64	44	57	54	36	80	118	80	137	24.00	1.92	18.00	4.08	225.99	1440.28	560.31
Lake	38	15	31	31	12	39	69	27	70	24.00	1.92	18.00	4.08	131.60	479.73	284.37
West	16	6	13	13	5	16	29	11	29	24.00	1.92	18.00	4.08	55.07	201.74	118.62
Ralston	19	7	16	16	6	20	35	13	35	24.00	1.92	18.00	4.08	66.63	242.81	144.02
Washington	9	4	8	8	3	9	17	7	17	24.00	1.92	18.00	4.08	32.52	120.34	69.63
Sutro	61	23	50	49	19	63	110	42	113	24.00	1.92	18.00	4.08	210.61	753.13	461.13
Morrill	1	1	1	1	0	1	2	1	2	24.00	1.92	18.00	4.08	4.56	17.07	9.70
Vine	20	8	17	17	7	21	37	15	37	24.00	1.92	18.00	4.08	71.39	263.81	152.99
Evans	63	24	52	51	19	66	114	43	118	24.00	1.92	18.00	4.08	219.74	782.01	480.62
TOTAL	448	231	486	432	228	554	881	459	1041					1690.88	8258.34	4245.84

EMISSIONS PER CROSSING
1995 SUMMARY
36 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	59	38	140	0	0	0	59	38	140	36.00	2.88	27.00	6.12	171.33	1021.36	858.16
Virginia	33	25	35	26	20	44	59	46	80	36.00	2.88	27.00	6.12	170.40	1229.04	488.69
Sierra	0	0	0	108	66	118	108	66	118	36.00	2.88	27.00	6.12	312.40	1779.63	723.37
Arlington	48	27	40	39	22	50	87	50	89	36.00	2.88	27.00	6.12	250.71	1338.07	545.40
Keystone	58	40	52	48	33	70	106	72	122	36.00	2.88	27.00	6.12	305.04	1956.69	746.90
Lake	34	13	28	28	11	35	62	24	63	36.00	2.88	27.00	6.12	179.37	655.72	386.93
West	14	6	12	12	5	15	26	10	26	36.00	2.88	27.00	6.12	75.26	276.32	161.90
Ralston	17	7	14	14	5	17	31	12	32	36.00	2.88	27.00	6.12	89.63	327.64	193.33
Washington	8	3	7	7	3	8	15	6	15	36.00	2.88	27.00	6.12	43.45	161.01	92.95
Sutro	55	21	45	44	17	56	99	38	101	36.00	2.88	27.00	6.12	284.25	1021.88	620.03
Morrill	1	1	1	1	0	1	2	1	2	36.00	2.88	27.00	6.12	6.84	25.60	14.55
Vine	19	7	15	15	6	19	34	13	34	36.00	2.88	27.00	6.12	97.21	359.71	208.13
Evans	0	0	0	0	0	0	0	0	0	36.00	2.88	27.00	6.12	0.00	0.00	0.00
TOTAL	347	188	389	342	188	434	690	376	824					1985.88	10152.67	5040.34

EMISSIONS PER CROSSING
2000 SUMMARY
36 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	OFF	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	66	42	158	0	0	0	66	42	158	36.00	2.88	27.00	6.12	190.80	1131.13	965.70
Virginia	36	28	39	29	23	50	66	50	89	36.00	2.88	27.00	6.12	188.78	1356.25	544.28
Sierra	0	0	0	122	73	135	122	73	135	36.00	2.88	27.00	6.12	351.60	1973.58	828.93
Arlington	54	30	44	43	24	55	97	55	99	36.00	2.88	27.00	6.12	278.00	1475.20	607.74
Keystone	64	44	57	54	36	80	118	80	137	36.00	2.88	27.00	6.12	338.98	2160.42	840.47
Lake	38	15	31	31	12	39	69	27	70	36.00	2.88	27.00	6.12	197.39	719.59	426.56
West	16	6	13	13	5	16	29	11	29	36.00	2.88	27.00	6.12	82.60	302.60	177.93
Ralston	19	7	16	16	6	20	35	13	35	36.00	2.88	27.00	6.12	99.95	364.21	216.03
Washington	9	4	8	8	3	9	17	7	17	36.00	2.88	27.00	6.12	48.78	180.50	104.45
Sutro	61	23	50	49	19	63	110	42	113	36.00	2.88	27.00	6.12	315.91	1129.70	691.70
Morrill	1	1	1	1	0	1	2	1	2	36.00	2.88	27.00	6.12	6.84	25.60	14.55
Vine	20	8	17	17	7	21	37	15	37	36.00	2.88	27.00	6.12	107.09	395.71	229.49
Evans	63	24	52	51	19	66	114	43	118	36.00	2.88	27.00	6.12	329.61	1173.01	720.93
TOTAL	448	231	486	432	228	554	881	459	1041					2536.33	12387.52	6368.76

EMISSIONS PER CROSSING
2007 SUMMARY
12.7 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	79	48	294	0	0	0	79	48	294	12.70	1.02	9.53	2.16	79.78	453.33	633.76
Virginia	43	31	73	35	25	89	78	57	162	12.70	1.02	9.53	2.16	79.13	539.78	349.29
Sierra	0	0	0	157	82	269	157	82	269	12.70	1.02	9.53	2.16	159.65	784.59	581.69
Arlington	60	34	51	49	28	62	110	62	113	12.70	1.02	9.53	2.16	111.50	587.43	244.33
Keystone	75	49	88	61	41	107	136	90	195	12.70	1.02	9.53	2.16	137.86	858.88	420.43
Lake	43	17	35	35	14	43	77	30	79	12.70	1.02	9.53	2.16	78.66	286.51	170.10
West	18	7	15	15	6	18	32	13	33	12.70	1.02	9.53	2.16	32.88	120.38	70.86
Ralston	22	8	18	18	-3	22	39	5	40	12.70	1.02	9.53	2.16	39.80	47.79	86.08
Washington	11	4	9	9	4	11	19	8	19	12.70	1.02	9.53	2.16	19.41	75.07	41.57
Sutro	72	26	69	59	21	84	130	47	153	12.70	1.02	9.53	2.16	132.28	448.83	329.25
Morrill	1	1	1	1	0	1	2	1	3	12.70	1.02	9.53	2.16	2.54	9.50	5.40
Vine	23	9	19	19	7	23	42	16	42	12.70	1.02	9.53	2.16	42.36	156.48	90.79
Evans	71	26	57	58	21	70	129	47	128	12.70	1.02	9.53	2.16	130.92	448.84	275.70
TOTAL	516	260	728	515	246	800	1030	506	1528					1046.74	4817.40	3299.25

EMISSIONS PER CROSSING
2015 SUMMARY
12.7 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	OFF	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	133	50	317	0	0	0	133	50	317	12.70	1.02	9.53	2.16	134.62	477.14	684.16
Virginia	63	34	81	52	27	100	115	61	181	12.70	1.02	9.53	2.16	116.35	583.99	390.83
Sierra	0	0	0	276	90	303	276	90	303	12.70	1.02	9.53	2.16	280.09	854.29	654.58
Arlington	66	37	56	54	30	68	119	67	124	12.70	1.02	9.53	2.16	121.28	635.37	267.16
Keystone	100	54	100	82	44	123	181	98	223	12.70	1.02	9.53	2.16	184.01	931.86	481.88
Lake	46	18	38	38	15	47	84	32	85	12.70	1.02	9.53	2.16	85.20	309.49	184.56
West	20	8	16	16	6	20	36	14	36	12.70	1.02	9.53	2.16	36.09	131.80	77.91
Ralston	24	9	20	19	-4	24	43	5	44	12.70	1.02	9.53	2.16	43.54	51.88	94.36
Washington	11	4	9	9	4	11	20	8	21	12.70	1.02	9.53	2.16	20.74	80.44	44.43
Sutro	118	28	76	97	23	93	215	51	170	12.70	1.02	9.53	2.16	218.34	485.75	366.91
Morrill	1	1	1	1	0	1	2	1	3	12.70	1.02	9.53	2.16	2.54	9.50	5.40
Vine	25	10	21	20	8	25	45	18	46	12.70	1.02	9.53	2.16	45.91	169.38	98.49
Evans	77	29	65	63	24	80	140	53	145	12.70	1.02	9.53	2.16	142.19	502.61	312.72
TOTAL	682.61	280.98	801.41	725.76	267.42	895.38	1408.37	548.40	1696.80					1430.90	5223.52	3663.39

EMISSIONS PER CROSSING
1995 SUMMARY
24 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	79	48	294	0	0	0	79	48	294	24.00	1.92	18.00	4.08	150.77	856.69	1197.67
Virginia	43	31	73	35	25	89	78	57	162	24.00	1.92	18.00	4.08	149.53	1020.07	660.08
Sierra	0	0	0	157	82	269	157	82	269	24.00	1.92	18.00	4.08	301.70	1482.68	1099.27
Arlington	60	34	51	49	28	62	110	62	113	24.00	1.92	18.00	4.08	210.70	1110.10	461.73
Keystone	75	49	88	61	41	107	136	90	195	24.00	1.92	18.00	4.08	260.51	1623.07	794.51
Lake	43	17	35	35	14	43	77	30	79	24.00	1.92	18.00	4.08	148.65	541.43	321.45
West	18	7	15	15	6	18	32	13	33	24.00	1.92	18.00	4.08	62.14	227.48	133.91
Ralston	22	8	18	18	-3	22	39	5	40	24.00	1.92	18.00	4.08	75.21	90.32	162.66
Washington	11	4	9	9	4	11	19	8	19	24.00	1.92	18.00	4.08	36.68	141.87	78.55
Sutro	72	26	69	59	21	84	130	47	153	24.00	1.92	18.00	4.08	249.98	848.18	622.20
Morrill	1	1	1	1	0	1	2	1	3	24.00	1.92	18.00	4.08	4.80	17.95	10.20
Vine	23	9	19	19	7	23	42	16	42	24.00	1.92	18.00	4.08	80.05	295.70	171.57
Evans	71	26	57	58	21	70	129	47	128	24.00	1.92	18.00	4.08	247.40	848.19	521.01
TOTAL	516	260	728	515	246	800	1030	506	1528					1978.10	9103.75	6234.80

EMISSIONS PER CROSSING
2015 SUMMARY
24 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	133	50	317	0	0	0	133	50	317	24.00	1.92	18.00	4.08	254.41	901.68	1292.89
Virginia	63	34	81	52	27	100	115	61	181	24.00	1.92	18.00	4.08	219.88	1103.61	738.57
Sierra	0	0	0	276	90	303	276	90	303	24.00	1.92	18.00	4.08	529.30	1614.41	1237.00
Arlington	66	37	56	54	30	68	119	67	124	24.00	1.92	18.00	4.08	229.18	1200.69	504.87
Keystone	100	54	100	82	44	123	181	98	223	24.00	1.92	18.00	4.08	347.74	1761.00	910.64
Lake	46	18	38	38	15	47	84	32	85	24.00	1.92	18.00	4.08	161.00	584.86	348.77
West	20	8	16	16	6	20	36	14	36	24.00	1.92	18.00	4.08	68.20	249.07	147.24
Ralston	24	9	20	19	-4	24	43	5	44	24.00	1.92	18.00	4.08	82.28	98.05	178.32
Washington	11	4	9	9	4	11	20	8	21	24.00	1.92	18.00	4.08	39.19	152.02	83.97
Sutro	118	28	76	97	23	93	215	51	170	24.00	1.92	18.00	4.08	412.62	917.96	693.38
Morrill	1	1	1	1	0	1	2	1	3	24.00	1.92	18.00	4.08	4.80	17.95	10.20
Vine	25	10	21	20	8	25	45	18	46	24.00	1.92	18.00	4.08	86.77	320.10	186.12
Evans	77	29	65	63	24	80	140	53	145	24.00	1.92	18.00	4.08	268.71	949.81	590.96
TOTAL	683	281	801	726	267	895	1408	548	1697					2704.07	9871.21	6922.93

EMISSIONS PER CROSSING
2007 SUMMARY
36 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	PM	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	79	48	294	0.00	0.00	0.00	78.52	47.59	293.55	36.00	2.88	27.00	6.12	226.15	1285.04	1796.50
Virginia	43	31	73	35.05	25.40	88.98	77.88	56.67	161.78	36.00	2.88	27.00	6.12	224.29	1530.10	990.12
Sierra	0	0	0	157.13	82.37	269.43	157.13	82.37	269.43	36.00	2.88	27.00	6.12	452.54	2224.02	1648.90
Arlington	60	34	51	49.38	27.63	62.24	109.74	61.67	113.17	36.00	2.88	27.00	6.12	316.05	1665.15	692.59
Keystone	75	49	88	61.06	40.80	107.10	135.68	90.17	194.73	36.00	2.88	27.00	6.12	390.77	2434.61	1191.77
Lake	43	17	35	34.84	13.51	43.33	77.42	30.08	78.79	36.00	2.88	27.00	6.12	222.98	812.15	482.17
West	18	7	15	14.56	5.68	18.05	32.36	12.64	32.82	36.00	2.88	27.00	6.12	93.20	341.22	200.87
Ralston	22	8	18	17.63	-3.36	21.93	39.17	5.02	39.87	36.00	2.88	27.00	6.12	112.81	135.48	244.00
Washington	11	4	9	8.60	3.73	10.59	19.10	7.88	19.25	36.00	2.88	27.00	6.12	55.02	212.81	117.83
Sutro	72	26	69	58.59	21.14	83.88	130.20	47.12	152.50	36.00	2.88	27.00	6.12	374.96	1272.26	933.30
Morrill	1	1	1	1.12	0.45	1.38	2.50	1.00	2.50	36.00	2.88	27.00	6.12	7.19	26.93	15.30
Vine	23	9	19	18.76	7.38	23.13	41.69	16.43	42.05	36.00	2.88	27.00	6.12	120.07	443.56	257.35
Evans	71	26	57	57.98	21.14	70.23	128.85	47.12	127.70	36.00	2.88	27.00	6.12	371.10	1272.29	781.51
TOTAL	516	260	728	514.70	245.86	800.27	1030.26	505.76	1528.14					2967.14	13655.63	9352.21

EMISSIONS PER CROSSING
2015 SUMMARY
36 TRAINS/DAY

	NORTHBOUND			SOUTHBOUND			TOTAL			TRAINS	CROSSINGS PER PEAK			EMISSION PER PEAK		
	AM	OFF	OFF	AM	OFF	PM	AM	OFF	PM	PER DAY	AM	OFF	PM	AM	OFF	PM
Center	133	50	317	0.00	0.00	0.00	132.50	50.09	316.89	36.00	2.88	27.00	6.12	381.61	1352.51	1939.34
Virginia	63	34	81	51.53	27.47	99.56	114.52	61.31	181.02	36.00	2.88	27.00	6.12	329.81	1655.41	1107.86
Sierra	0	0	0	275.68	89.69	303.19	275.68	89.69	303.19	36.00	2.88	27.00	6.12	793.95	2421.62	1855.50
Arlington	66	37	56	53.72	29.88	68.06	119.37	66.71	123.74	36.00	2.88	27.00	6.12	343.78	1801.04	757.31
Keystone	100	54	100	81.50	44.29	122.76	181.12	97.83	223.20	36.00	2.88	27.00	6.12	521.61	2641.50	1365.97
Lake	46	18	38	37.74	14.59	47.02	83.86	32.49	85.48	36.00	2.88	27.00	6.12	241.51	877.29	523.15
West	20	8	16	15.99	6.22	19.85	35.52	13.84	36.09	36.00	2.88	27.00	6.12	102.31	373.60	220.85
Ralston	24	9	20	19.28	-3.69	24.04	42.85	5.45	43.71	36.00	2.88	27.00	6.12	123.42	147.07	267.48
Washington	11	4	9	9.18	4.02	11.32	20.41	8.45	20.58	36.00	2.88	27.00	6.12	58.78	228.03	125.96
Sutro	118	28	76	96.71	22.87	93.47	214.90	51.00	169.95	36.00	2.88	27.00	6.12	618.93	1376.94	1040.06
Morrill	1	1	1	1.12	0.45	1.38	2.50	1.00	2.50	36.00	2.88	27.00	6.12	7.19	26.93	15.30
Vine	25	10	21	20.34	7.99	25.09	45.19	17.78	45.62	36.00	2.88	27.00	6.12	130.15	480.14	279.17
Evans	77	29	65	62.98	23.66	79.66	139.95	52.77	144.84	36.00	2.88	27.00	6.12	403.07	1424.72	886.44
TOTAL	683	281	801	725.76	267.42	895.38	1408.37	548.40	1696.80					4056.10	14806.82	10384.40

APPENDIX J
LEVEL OF SERVICE ANALYSIS RESULTS

- 1995
- 2000
- 2007
- 2015

Level of Service Summary

AM Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
		[illegible]	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Train/day		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Train/peak		1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	12.76	12.14	11.47	12.74	12.10	11.42							D	D	D	D	D	D						
Virginia	iii	12.85	12.31	11.73	12.83	12.28	11.68	12.93	12.50	12.05	12.93	12.50	12.05	D	D	D	D	D	D	D	D	D	D	D	D
Sierra	iii							12.77	12.18	11.56	12.77	12.18	11.56							D	D	D	D	D	D
Arlington	iii	12.74	12.03	11.28	12.71	11.97	11.18	12.56	11.70	10.78	12.53	11.70	10.78	D	D	D	D	D	D	D	D	D	D	D	D
Keystone	iii	12.85	12.24	11.59	12.84	12.21	11.54	12.82	12.21	11.56	12.82	12.21	11.56	D	D	D	D	D	D	D	D	D	D	D	D
Lake	iii	12.60	11.77	10.88	12.59	11.74	10.84	12.48	11.55	10.56	12.48	11.55	10.56	D	D	D	D	D	D	D	D	D	D	D	D
West	iii	12.62	11.80	10.93	12.61	11.78	10.91	12.61	11.79	10.91	12.61	11.79	10.91	D	D	D	D	D	D	D	D	D	D	D	D
Ralston	iii	12.60	11.77	10.88	12.59	11.74	10.84	12.63	11.82	10.96	12.63	11.82	10.96	D	D	D	D	D	D	D	D	D	D	D	D
Washington	iii	12.66	11.87	11.03	12.65	11.86	11.02	12.61	11.78	10.91	12.61	11.78	10.91	D	D	D	D	D	D	D	D	D	D	D	D
Sutro	iii	12.40	11.62	10.70	12.45	11.54	10.57	12.66	11.88	11.05	12.66	11.88	11.05	D	D	D	D	D	D	D	D	D	D	D	D
Morrill	iii	12.71	11.95	11.15	12.68	11.90	11.07	12.55	11.67	10.74	12.55	11.67	10.74	D	D	D	D	D	D	D	D	D	D	D	D
Vine	iii	12.65	11.86	11.02	12.50	11.57	10.59	12.70	11.95	11.15	12.70	11.95	11.15	D	D	D	D	D	D	D	D	D	D	D	D
Evans	iii				12.70	11.95	11.16				12.64	11.85	11.00				D	D	D				D	D	D

PM Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
		1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Train/day		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Train/peak		2.159	4.08	6.12	2.159	4.08	6.12	2.159	4.08	6.12	2.159	4.08	6.12	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	10.62	8.08	5.39	10.51	7.87	5.07							D	E	F	D	E	F						
Virginia	iii	11.84	10.40	8.86	11.79	10.31	8.73	12.17	11.08	9.89	11.65	10.08	8.42	D	D	E	D	D	E	D	D	D	D	D	E
Sierra	iii							11.08	8.99	6.77	11.08	8.99	6.77							D	E	F	D	E	F
Arlington	iii	11.81	10.28	8.65	11.76	10.17	8.49	11.61	9.89	8.07	11.61	9.89	8.07	D	D	E	D	D	E	D	D	E	D	D	E
Keystone	iii	11.95	10.54	9.04	11.91	10.45	8.91	11.26	9.27	7.15	11.26	9.27	7.15	D	D	D	D	D	E	D	D	E	D	D	E
Lake	iii	11.53	9.73	7.83	11.50	9.69	7.76	11.43	9.58	7.56	11.43	9.58	7.56	D	D	E	D	D	E	D	D	E	D	D	E
West	iii	11.57	9.81	7.95	11.55	9.77	7.89	11.49	9.67	7.73	11.49	9.67	7.73	D	D	E	D	D	E	D	D	E	D	D	E
Ralston	iii	11.53	9.73	7.83	11.50	9.68	7.75	11.43	9.55	7.55	11.43	9.55	7.55	D	D	E	D	D	E	D	D	E	D	D	E
Washington	iii	11.65	9.97	8.19	11.64	9.95	8.15	11.61	9.89	8.07	11.61	9.89	8.07	D	D	E	D	D	E	D	D	E	D	D	E
Sutro	iii	11.36	9.48	7.49	11.31	9.39	7.35	11.19	9.09	6.87	11.19	9.09	6.87	D	D	E	D	D	E	D	D	E	D	D	E
Morrill	iii	11.75	10.15	8.44	11.75	10.15	8.44	11.74	10.14	8.44	11.74	10.14	8.44	D	D	E	D	D	E	D	D	F	D	D	F
Vine	iii	11.64	9.95	8.15	11.62	9.92	8.12	11.59	9.86	8.02	11.59	9.86	8.02	D	D	E	D	D	E	D	D	E	D	D	E
Evans	iii				11.27	9.25	7.10				11.13	8.98	6.70				D	D	E				D	E	F

Off Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
		1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000	1995	1995	1995	2000	2000	2000
Train/day		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Train/peak		0.396875	0.75	1.125	0.396875	0.75	1.125	2.159	4.08	6.12	2.159	4.08	6.12	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	13.12	12.81	12.49	13.12	12.81	12.48							C	D	D	C	D	D						
Virginia	iii	13.12	12.81	12.48	13.12	12.81	12.48	11.60	9.98	8.27	11.59	9.98	8.23	C	D	D	C	D	D	D	D	E	D	D	E
Sierra	iii							11.46	9.70	7.84	11.42	9.84	7.75							D	D	E	D	D	E
Arlington	iii	13.21	12.92	12.61	13.16	12.86	12.52	11.62	9.92	8.12	11.61	9.90	8.08	C	D	D	C	D	D	D	D	E	D	D	E
Keystone	iii	13.18	12.86	12.53	13.18	12.86	12.52	11.55	9.81	7.96	11.53	9.78	7.89	C	D	D	C	D	D	D	D	E	D	D	E
Lake	iii	13.18	12.86	12.53	13.20	12.89	12.57	11.70	10.08	8.32	11.69	10.04	8.30	C	D	D	C	D	D	D	D	E	D	D	E
West	iii	13.20	12.89	12.57	13.20	12.90	12.57	11.71	10.08	8.35	11.70	10.07	8.33	C	D	D	C	D	D	D	D	E	D	D	E
Ralston	iii	13.20	12.90	12.58	13.20	12.89	12.57	11.70	10.08	8.32	11.69	10.04	8.30	C	D	D	C	D	D	D	D	E	D	D	E
Washington	iii	13.20	12.89	12.57	13.21	12.91	12.59	11.73	10.12	8.41	11.73	10.11	8.40	C	D	D	C	D	D	D	D	E	D	D	E
Sutro	iii	13.14	12.85	12.55	13.13	12.82	12.49	11.66	9.99	8.21	11.65	9.98	8.18	C	D	D	C	D	D	D	D	E	D	D	E
Morrill	iii	13.20	12.89	12.56	13.22	12.93	12.62	11.76	10.17	8.49	11.76	10.17	8.49	C	D	D	C	D	D	D	D	E	D	D	E
Vine	iii	13.21	12.92	12.61	13.20	12.90	12.59	11.73	10.11	8.40	11.72	10.11	8.39	C	D	D	C	D	D	D	D	E	D	D	E
Evans	iii				13.18	12.86	12.52	0.00	0.00	0.00	11.62	9.92	8.11				C	D	D				D	D	E

	1995 Northbound AM Peak			1995 Southbound AM Peak			1995 TOTAL AM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	11	11	11	11	11	11	22	22	22
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
total	11	11	11	11	11	11	22	22	22

	1995 Northbound PM Peak			1995 Southbound PM Peak			1995 TOTAL PM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	11	10	1	11	10	1	22	20	2
E	0	1	9	0	1	8	0	2	17
F	0	0	1	0	0	2	0	0	3
total	11	11	11	11	11	11	22	22	22

	1995 Northbound OFFPeak			1995 Southbound OFFPeak			1995 TOTAL OFFPeak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	11	0	0	0	0	0	11	0	0
D	0	11	11	11	11	0	11	22	11
E	0	0	0	0	0	11	0	0	11
F	0	0	0	0	0	0	0	0	0
total	11	11	11	11	11	11	22	22	22

	2000 Northbound AM Peak			2000 Southbound AM Peak			2000 TOTAL AM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	12	12	12	12	12	12	24	24	24
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
total	12	12	12	12	12	12	24	24	24

	2000 Northbound PM Peak			2000 Southbound PM Peak			2000 TOTAL PM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	12	11	0	12	10	0	24	21	0
E	0	1	11	0	2	9	0	3	20
F	0	0	1	0	0	3	0	0	4
total	12	12	12	12	12	12	24	24	24

	2000 Northbound OFFPeak			2000 Southbound OFFPeak			2000 TOTAL OFFPeak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	12	0	0	0	0	0	12	0	0
D	0	12	12	12	12	0	12	24	12
E	0	0	0	0	0	12	0	0	12
F	0	0	0	0	0	0	0	0	0
total	12	12	12	12	12	12	24	24	24

CITY OF RENO - RAILROAD DELAY STUDY
Level of Service Analysis

AM PEAK - 1995
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	III	25	0.04	1160.00	48.98	265	30	60	152	191	3	2400	0.09538	-0.07058	0.070583	0.0980	0.37	13.47
Virginia	NB	III	25	0.04	770.00	28.23	265	30	60	132	165	2	1800	0.09585	-0.05292	0.052922	0.0959	0.35	13.48
Arlington	NB	III	25	0.11	836.00	38.32	265	30	60	185	211	2	1800	0.09815	-0.09684	0.096852	0.0982	0.16	13.54
Keystone	NB	III	25	0.11	1215.50	48.28	265	30	60	143	182	3	2400	0.09587	-0.06881	0.068813	0.0960	0.13	13.54
Lake	NB	III	25	0.10	416.83	25.64	265	30	60	221.5909	249	2	1800	0.09577	-0.04373	0.043734	0.0958	0.18	13.54
West	NB	III	25	0.11	178.00	10.83	265	30	60	221.5909	244	1	800	0.09585	-0.03129	0.031289	0.0957	0.18	13.54
Ralston	NB	III	25	0.11	208.18	12.81	265	30	60	221.5909	249	1	800	0.09577	-0.04387	0.04388	0.0958	0.16	13.54
Washington	NB	III	25	0.11	103.13	8.35	265	30	60	221.5909	234	1	800	0.09536	-0.01081	0.010806	0.0954	0.17	13.54
Sutro	NB	III	25	0.04	643.50	36.61	265	30	60	221.5909	267	2	1800	0.09819	-0.1034	0.103412	0.0982	0.48	13.47
Morrill	NB	III	25	0.16	18.50	1.02	265	30	60	221.5909	224	1	800	0.09508	-0.00028	0.000278	0.0951	0.11	13.55
Vine	NB	III	25	0.10	230.18	14.17	265	30	60	221.5909	238	2	1800	0.09542	-0.01344	0.013448	0.0954	0.18	13.54
Evans	NB																		

AM PEAK - 1995
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	III	25	0.03	830.00	0.00	265	30	60	132	132	2	1800	0.09500	0	0	0.0950	0.47	13.42
Sierra	SB	III	25	0.03	1970.00	23.10	265	30	60	152	178	3	2400	0.09546	-0.01587	0.015873	0.0955	0.80	13.43
Arlington	SB	III	25	0.10	684.00	83.18	265	30	60	185	245	2	1800	0.09589	-0.03554	0.035542	0.0957	0.16	13.54
Keystone	SB	III	25	0.08	894.50	31.35	265	30	60	143	179	2	1800	0.09754	-0.44324	0.443385	0.0977	0.25	13.51
Lake	SB	III	25	0.10	340.88	39.50	265	30	60	221.5909	272	2	1800	0.09584	-0.08512	0.085123	0.0959	0.18	13.54
West	SB	III	25	0.10	144.00	20.98	265	30	60	221.5909	243	1	800	0.09740	-0.40101	0.401224	0.0976	0.18	13.54
Ralston	SB	III	25	0.10	170.33	8.88	265	30	60	221.5909	240	1	800	0.09826	-0.11588	0.115813	0.0983	0.18	13.54
Washington	SB	III	25	0.10	84.38	10.48	265	30	60	221.5909	243	1	800	0.09553	-0.021	0.021004	0.0955	0.18	13.54
Sutro	SB	III	25	0.11	526.50	5.19	265	30	60	221.5909	232	2	1800	0.09531	-0.00738	0.007379	0.0953	0.19	13.54
Morrill	SB	III	25	0.11	13.50	32.41	265	30	60	221.5909	257	1	800	0.09531	-0.00724	0.007244	0.0953	0.17	13.54
Vine	SB	III	25	0.11	188.33	0.83	265	30	60	221.5906	223	2	1800	0.09597	-0.08954	0.089544	0.0960	0.17	13.54
Evans	SB																		

PM PEAK - 1995
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	III	25	0.04	1160.00	87.32	265	30	60	271	370	3	2400	0.09878	-0.22088	0.220718	0.0988	0.85	13.47
Virginia	NB	III	40	0.04	830.00	28.35	265	30	60	182	207	2	1800	0.09585	-0.05335	0.053357	0.0958	0.41	13.48
Arlington	NB	III	30	0.11	884.00	31.18	265	30	60	184	215	2	1800	0.09583	-0.08434	0.084343	0.0959	0.16	13.54
Keystone	NB	III	40	0.11	994.50	41.99	265	30	60	152	197	3	2400	0.09584	-0.05203	0.052033	0.0956	0.14	13.54
Lake	NB	III	25	0.10	340.88	20.98	265	30	60	221.5909	251	2	1800	0.09583	-0.02938	0.029382	0.0958	0.19	13.54
West	NB	III	25	0.11	144.00	8.88	265	30	60	221.5909	248	1	800	0.09553	-0.021	0.021004	0.0955	0.18	13.54
Ralston	NB	III	25	0.11	170.33	10.48	265	30	60	221.5909	251	1	800	0.09563	-0.02932	0.029326	0.0956	0.18	13.54
Washington	NB	III	30	0.11	84.38	5.19	265	30	60	221.5909	235	1	800	0.09531	-0.00724	0.007244	0.0953	0.17	13.54
Sutro	NB	III	40	0.04	526.50	32.41	265	30	60	221.5909	271	2	1800	0.09597	-0.08954	0.089544	0.0960	0.48	13.47
Morrill	NB	III	25	0.16	13.50	0.83	265	30	60	221.5906	224	1	800	0.09505	-0.00019	0.000188	0.0950	0.11	13.55
Vine	NB	III	25	0.10	188.33	11.59	265	30	60	221.5909	237	2	1800	0.09536	-0.00801	0.008015	0.0953	0.18	13.54
Evans	NB																		

PM PEAK - 1995
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	III	25	0.03	770.00	0.00	265	30	60	182	182	2	1800	0.09500	0	0	0.0950	0.81	13.42
Sierra	SB	III	25	0.03	1970.00	34.85	265	30	60	153	212	3	2400	0.09589	-0.03554	0.035542	0.0957	0.70	13.42
Arlington	SB	III	30	0.10	836.00	83.73	265	30	60	184	292	2	1800	0.08755	-0.44893	0.449056	0.0877	0.16	13.54
Keystone	SB	III	40	0.08	1215.50	38.08	265	30	60	152	219	2	1800	0.09814	-0.09588	0.095886	0.0982	0.32	13.51
Lake	SB	III	25	0.10	416.83	51.32	265	30	60	221.5909	333	2	1800	0.09855	-0.17228	0.172311	0.0986	0.20	13.54
West	SB	III	25	0.10	178.00	25.84	265	30	60	221.5909	258	1	800	0.09855	-0.17207	0.172128	0.0986	0.19	13.54
Ralston	SB	III	25	0.10	208.18	10.63	265	30	60	221.5908	252	1	800	0.09585	-0.03129	0.031289	0.0957	0.19	13.54
Washington	SB	III	30	0.10	103.13	12.81	265	30	60	221.5909	258	1	800	0.09577	-0.04387	0.04388	0.0958	0.18	13.54
Sutro	SB	III	40	0.11	643.50	6.35	265	30	60	221.5909	239	2	1800	0.09519	-0.00271	0.002712	0.0952	0.20	13.54
Morrill	SB	III	25	0.11	18.50	39.61	265	30	60	221.5909	285	1	800	0.08741	-0.4031	0.403317	0.0976	0.17	13.54
Vine	SB	III	25	0.11	230.18	1.02	265	30	60	221.5909	224	2	1800	0.09503	-7.0E-05	0.00007	0.0950	0.17	13.54
Evans	SB																		

OFF PEAK - 1995
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	III	25	0.04	464.00	28.58	265	30	60	221.59	241	3	2400	0.09500	-0.02421	0.024208	0.0950	0.45	13.47
Virginia	NB	III	40	0.04	308.00	18.98	265	30	60	221.59	241	2	1800	0.09500	-0.024	0.024002	0.0950	0.47	13.48
Arlington	NB	III	30	0.11	334.40	20.58	265	30	60	221.59	222	2	1800	0.09500	-0.02826	0.028285	0.0950	0.18	13.54
Keystone	NB	III	40	0.11	488.20	29.93	265	30	60	221.58	243	3	2400	0.09557	-0.02858	0.028588	0.0958	0.17	13.54
Lake	NB	III	25	0.10	188.85	10.28	265	30	60	221.58	242	2	1800	0.09557	-0.00707	0.007085	0.0958	0.17	13.54
West	NB	III	25	0.11	70.40	4.33	265	30	60	221.59	232	1	800	0.09824	-0.00505	0.005049	0.0982	0.17	13.54
Ralston	NB	III	25	0.11	83.27	5.13	265	30	60	221.59	230	1	800	0.09881	-0.00708	0.007058	0.0988	0.17	13.54
Washington	NB	III	30	0.11	41.25	2.54	265	30	60	221.58	232	1	800	0.09561	-0.00174	0.001737	0.0956	0.16	13.54
Sutro	NB	III	40	0.04	257.40	15.84	265	30	60	221.59	226	2	1800	0.09513	-0.0188	0.018797	0.0951	0.44	13.47
Morrill	NB	III	25	0.16	6.80	0.41	265	30	60	221.59	238	1	800	0.09531	-4.5E-05	0.000045	0.0953	0.11	13.55
Vine	NB	III	25	0.10	92.07	5.67	265	30	60	221.59	222	2	1800	0.09508	-0.00218	0.002183	0.0951	0.17	13.54
Evans	NB																		

OFF PEAK - 1995
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	III	25	0.03	252.00	15.51	265	30	60	221.5908	237	2	1800	0.09548	-0.0161	0.016103	0.0955	0.85	13.41
Sierra	SB	III	25	0.03	788.00	48.50	265	30	60	221.5909	257	3	2400	0.09597	-0.08923	0.089237	0.0960	0.85	13.42
Arlington	SB	III	30	0.10	273.60	16.84	265	30	60	221.5909	239	2	1800	0.09848	-0.15417	0.154191	0.0985	0.18	13.54
Keystone	SB	III	40	0.08	397.80	24.49	265	30	60	221.5909	247	2	1800	0.09550	-0.01898	0.018986	0.0955	0.31	13.51
Lake	SB	III	25	0.10	136.35	8.39	265	30	60	221.5909	230	2	1800	0.09573	-0.0399	0.0399	0.0957	0.18	13.54
West	SB	III	25	0.10	57.60	3.55	265	30	60	221.5909	228	1	800	0.09550	-0.01884	0.018843	0.0955	0.17	13.54
Ralston	SB	III	25	0.10	68.13	4.19	265	30	60	221.5908	230	1	800	0.09521	-0.00338	0.003383	0.0952	0.18	13.54
Washington	SB	III	30	0.10	33.75	2.08	265	30	60	221.5909	226	1	800	0.09525	-0.00473	0.004729	0.0952	0.16	13.54
Sutro	SB	III	40	0.11	210.80	12.96	265	30	60	221.5909	236	2	1800	0.09508	-0.00029	0.000291	0.0951	0.17	13.54
Morrill	SB	III	25	0.11	5.40	0.33	265	30	60	221.5909	222	1	800	0.09578	-0.04469	0.044695	0.0958	0.18	13.54
Vine	SB	III	25	0.11	75.33	4.84	265	30	60	221.5909	226	2	1800	0.09501	-7.5E-08	7.5E-08	0.0950	0.16	13.54
Evans	SB																		

1995 Level of Service
Without Train

Arterial	Northbound am	Northbound pm	Northbound off	Southbound am	Southbound pm	Southbound off
Center	C	C	C			
Virginia	C	C	C	C	C	C
Sierra				C	C	C
Arlington	C	C	C	C	C	C
Keystone	C	C	C	C	C	C
Lake	C	C	C	C	C	C
West	C	C	C	C	C	C
Ralston	C	C	C	C	C	C
Washington	C	C	C	C	C	C
Sutro	C	C	C	C	C	C
Morrill	C	C	C	C	C	C
Vine	C	C	C	C	C	C
Evans						

CITY OF RENO - RAILROAD DELAY STUDY
Level of Service Analysis

AM PEAK - 2018
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	ii	25	0.04	1280.00	54.04	265	30	80	152	196	3	2400	0.09608	-0.08575	0.085757	0.0981	0.37	13.47
Virginia	NB	ii	25	0.04	847.00	31.08	265	30	80	132	170	2	1800	0.09583	-0.08392	0.083921	0.0959	0.35	13.46
Arlington	NB	ii	25	0.11	918.50	42.10	265	30	80	165	217	2	1600	0.09827	-0.11661	0.116629	0.0983	0.00	13.54
Keystone	NB	ii	25	0.11	1336.50	53.08	265	30	80	143	187	3	2400	0.09808	-0.08278	0.082784	0.0981	0.18	13.54
Lake	NB	ii	25	0.10	456.50	28.10	265	30	80	221.5909	252	2	1800	0.09584	-0.05242	0.052424	0.0958	0.13	13.54
West	NB	ii	25	0.11	182.50	11.85	265	30	80	221.5909	248	1	800	0.09571	-0.03739	0.037395	0.0957	0.18	13.54
Ralston	NB	ii	25	0.11	231.00	14.22	265	30	80	221.5909	252	1	800	0.09585	-0.05368	0.053688	0.0959	0.18	13.54
Washington	NB	ii	25	0.11	115.50	7.11	265	30	80	221.5909	236	1	800	0.09542	-0.01354	0.013542	0.0954	0.18	13.54
Sutro	NB	ii	25	0.04	709.50	43.67	265	30	80	221.5909	272	2	1600	0.09831	-0.12537	0.125387	0.0983	0.17	13.47
Morrill	NB	ii	25	0.18	18.50	1.02	265	30	80	221.5909	237	1	800	0.09506	-0.00028	0.000278	0.0951	0.49	13.55
Vine	NB	ii	25	0.10	253.00	15.57	265	30	80	221.5909	275	2	1800	0.09548	-0.01823	0.01823	0.0955	0.11	13.54
Evans	NB	ii	25	0.10	735.90	45.38	265	30	80	222	222	2	1800	0.09637	-0.13522	0.135243	0.0964	0.18	13.54

AM PEAK - 2018
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	ii	25	0.03	893.00	0.00	265	30	80	132	132	2	1600	0.09500	0	0	0.0950	0.47	13.42
Sierra	SB	ii	25	0.03	2170.00	25.41	265	30	80	152	181	3	2400	0.09561	-0.01919	0.019188	0.0955	0.60	13.43
Arlington	SB	ii	25	0.10	751.50	91.62	265	30	80	185	258	2	1800	0.09578	-0.04294	0.042944	0.0958	0.18	13.54
Keystone	SB	ii	25	0.08	1083.50	34.44	265	30	80	143	183	2	1800	0.09780	-0.53481	0.53488	0.0980	0.25	13.51
Lake	SB	ii	25	0.10	373.50	43.44	265	30	80	221.5906	279	2	1800	0.09803	-0.07845	0.078458	0.0980	0.19	13.54
West	SB	ii	25	0.10	157.50	22.99	265	30	80	221.5909	248	1	800	0.09785	-0.48231	0.482803	0.0979	0.18	13.54
Ralston	SB	ii	25	0.10	189.00	9.69	265	30	80	221.5909	242	1	800	0.09638	-0.13877	0.138808	0.0964	0.18	13.54
Washington	SB	ii	25	0.10	94.50	11.63	265	30	80	221.5909	248	1	800	0.09558	-0.0251	0.025101	0.0956	0.18	13.54
Sutro	SB	ii	25	0.11	580.50	5.82	265	30	80	221.5909	233	2	1600	0.09535	-0.00808	0.00808	0.0953	0.19	13.54
Morrill	SB	ii	25	0.11	13.50	35.73	265	30	80	221.5909	261	1	800	0.09535	-0.00808	0.00808	0.0953	0.17	13.54
Vine	SB	ii	25	0.11	207.00	0.63	265	30	80	221.5909	223	2	1800	0.09807	-0.08435	0.084383	0.0981	0.17	13.54
Evans	SB	ii	25	0.10	802.10	12.74	265	30	80	222	235	2	1800	0.09502	-4.7E-05	0.000047	0.0950	0.03	13.54

PM PEAK - 2018
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	ii	25	0.04	1280.00	96.38	265	30	80	271	385	3	2400	0.09695	-0.26766	0.267658	0.0970	0.85	13.47
Virginia	NB	ii	40	0.04	693.00	31.16	265	30	80	162	213	2	1800	0.09583	-0.08444	0.084446	0.0958	0.41	13.46
Arlington	NB	ii	30	0.11	751.50	34.24	265	30	80	164	222	2	1800	0.09803	-0.07751	0.077518	0.0980	0.16	13.54
Keystone	NB	ii	40	0.11	1093.50	46.17	265	30	80	152	204	3	2400	0.09582	-0.08279	0.082797	0.0958	0.14	13.54
Lake	NB	ii	25	0.10	373.50	22.99	265	30	80	221.5909	255	2	1800	0.09569	-0.0352	0.035207	0.0957	0.19	13.54
West	NB	ii	25	0.11	157.50	9.69	265	30	80	221.5909	249	1	800	0.09558	-0.0251	0.025101	0.0958	0.18	13.54
Ralston	NB	ii	25	0.11	189.00	11.83	265	30	80	221.5909	255	1	800	0.09570	-0.03805	0.038057	0.0957	0.18	13.54
Washington	NB	ii	30	0.11	94.50	5.82	265	30	80	221.5909	237	1	800	0.09535	-0.00808	0.00808	0.0953	0.17	13.54
Sutro	NB	ii	40	0.04	580.50	35.73	265	30	80	221.5909	278	2	1600	0.09807	-0.08435	0.084383	0.0981	0.40	13.47
Morrill	NB	ii	25	0.18	13.50	0.83	265	30	80	221.5909	224	1	800	0.09505	-0.00019	0.000188	0.0950	0.11	13.55
Vine	NB	ii	25	0.10	207.00	12.74	265	30	80	221.5909	239	2	1800	0.09538	-0.01088	0.010884	0.0954	0.18	13.54
Evans	NB	ii	25	0.10	802.10	37.08	265	30	80	221.5909	280	2	1800	0.09811	-0.08087	0.080881	0.0981	0.03	13.54

PM PEAK - 2018
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	ii	25	0.03	847.00	38.12	265	30	80	162	229	2	1800	0.09615	-0.09584	0.09585	0.0962	0.61	13.41
Sierra	SB	ii	25	0.03	2170.00	92.23	265	30	80	153	307	3	2400	0.09886	-0.24584	0.245878	0.0989	0.70	13.42
Arlington	SB	ii	30	0.10	918.50	41.64	265	30	80	164	241	2	1800	0.09826	-0.11522	0.115239	0.0983	0.18	13.54
Keystone	SB	ii	40	0.08	1336.50	58.43	265	30	80	152	284	2	1800	0.09871	-0.2078	0.207842	0.0987	0.32	13.51
Lake	SB	ii	25	0.10	456.50	28.10	265	30	80	221.5909	263	2	1800	0.09584	-0.05242	0.052424	0.0958	0.20	13.54
West	SB	ii	25	0.10	192.50	11.85	265	30	80	221.5909	258	1	800	0.09571	-0.03739	0.037395	0.0957	0.18	13.54
Ralston	SB	ii	25	0.10	231.00	14.22	265	30	80	221.5909	264	1	800	0.09585	-0.05368	0.053688	0.0959	0.19	13.54
Washington	SB	ii	30	0.10	115.50	7.11	265	30	80	221.5909	241	1	800	0.09542	-0.01354	0.013542	0.0954	0.18	13.54
Sutro	SB	ii	40	0.11	709.50	43.67	265	30	80	221.5909	294	2	1800	0.09831	-0.12537	0.125387	0.0983	0.20	13.54
Morrill	SB	ii	25	0.11	16.50	1.02	265	30	80	221.5909	224	1	800	0.09508	-0.00028	0.000278	0.0951	0.17	13.54
Vine	SB	ii	25	0.11	253.00	15.57	265	30	80	221.5909	243	2	1800	0.09548	-0.01823	0.01823	0.0955	0.17	13.54
Evans	SB	ii	25	0.10	735.90	45.30	265	30	80	221.5909	298	2	1800	0.09838	-0.13473	0.134752	0.0984	0.03	13.54

OFF PEAK - 2018
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	ii	25	0.04	512.00	31.52	265	30	80	221.59	243	3	2400	0.09500	-0.02944	0.02944	0.0950	0.45	13.47
Virginia	NB	ii	40	0.04	338.80	20.85	265	30	80	221.59	243	2	1800	0.09500	-0.02901	0.029008	0.0950	0.47	13.46
Arlington	NB	ii	30	0.11	367.40	22.61	265	30	80	221.59	245	2	1800	0.09500	-0.03407	0.034075	0.0950	0.18	13.54
Keystone	NB	ii	40	0.11	534.60	32.91	265	30	80	221.59	244	3	2400	0.09583	-0.03208	0.032078	0.0958	0.17	13.54
Lake	NB	ii	25	0.10	182.60	11.24	265	30	80	221.5[illegible]	233	2	1800	0.09562	-0.00648	0.006477	0.0956	0.17	13.54
West	NB	ii	25	0.11	77.00	4.74	265	30	80	221.59	231	1	800	0.09636	-0.00804	0.008037	0.0964	0.17	13.54
Ralston	NB	ii	25	0.11	92.40	5.69	265	30	80	221.59	233	1	800	0.09699	-0.00668	0.006682	0.0970	0.17	13.54
Washington	NB	ii	30	0.11	46.20	2.84	265	30	80	221.59	227	1	800	0.09567	-0.00218	0.002178	0.0957	0.18	13.54
Sutro	NB	ii	40	0.04	283.80	17.47	265	30	80	221.59	239	2	1600	0.09514	-0.0204	0.020398	0.0951	0.44	13.47
Morrill	NB	ii	25	0.18	6.60	0.41	265	30	80	221.59	222	1	800	0.09534	-4.5E-05	0.000045	0.0953	0.11	13.55
Vine	NB	ii	25	0.10	101.20	6.23	265	30	80	221.59	228	2	1600	0.09508	-0.00261	0.002612	0.0951	0.17	13.54
Evans	NB	ii	0	0.10	294.36	18.12	265	30	80	221.56	240	2	1600	0.09552	-0.02193	0.021935	0.0955	0.03	13.54

OFF PEAK - 2018
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	ii	25	0.03	277.20	17.06	265	30	80	221.5909	239	2	1600	0.09551	-0.01946	0.019465	0.0955	0.65	13.41
Sierra	SB	ii	25	0.03	868.00	53.43	265	30	80	221.5909	261	3	2400	0.09807	-0.08383	0.083834	0.0981	0.65	13.42
Arlington	SB	ii	30	0.10	300.60	18.50	265	30	80	221.5909	241	2	1800	0.09861	-0.18648	0.186497	0.0986	0.18	13.54
Keystone	SB	ii	40	0.08	437.40	26.92	265	30	80	221.5909	250	2	1800	0.09555	-0.02287	0.02287	0.0956	0.31	13.51
Lake	SB	ii	25	0.10	149.40	9.20	265	30	80	221.5909	231	2	1800	0.09581	-0.04816	0.048165	0.0958	0.18	13.54
West	SB	ii	25	0.10	63.00	3.88	265	30	80	221.5909	229	1	800	0.09555	-0.0226	0.022589	0.0956	0.17	13.54
Ralston	SB	ii	25	0.10	75.60	4.65	265	30	80	221.5909	231	1	800	0.09523	-0.00405	0.004045	0.0952	0.18	13.54
Washington	SB	ii	30	0.10	37.80	2.33	265	30	80	221.5909	228	1	800	0.09528	-0.00582	0.00582	0.0953	0.16	13.54
Sutro	SB	ii	40	0.11	232.20	14.29	265	30	80	221.5909	238	2	1600	0.09507	-0.00037	0.000365	0.0951	0.17	13.54
Morrill	SB	ii	25	0.11	5.40	0.33	265	30	80	221.5909	222	1	800	0.09586	-0.05423	0.054243	0.0959	0.16	13.54
Vine	SB	ii	25	0.11	82.80	5.10	265	30	80	221.5906	227	2	1600	0.09501	-7.5E-08	7.5E-08	0.0950	0.16	13.54
Evans	SB	ii	25	0.10	240.84	14.82	265	30	80	221.5909	237	2	1600	0.09515	-0.00175	0.00175	0.0952	0.03	13.54

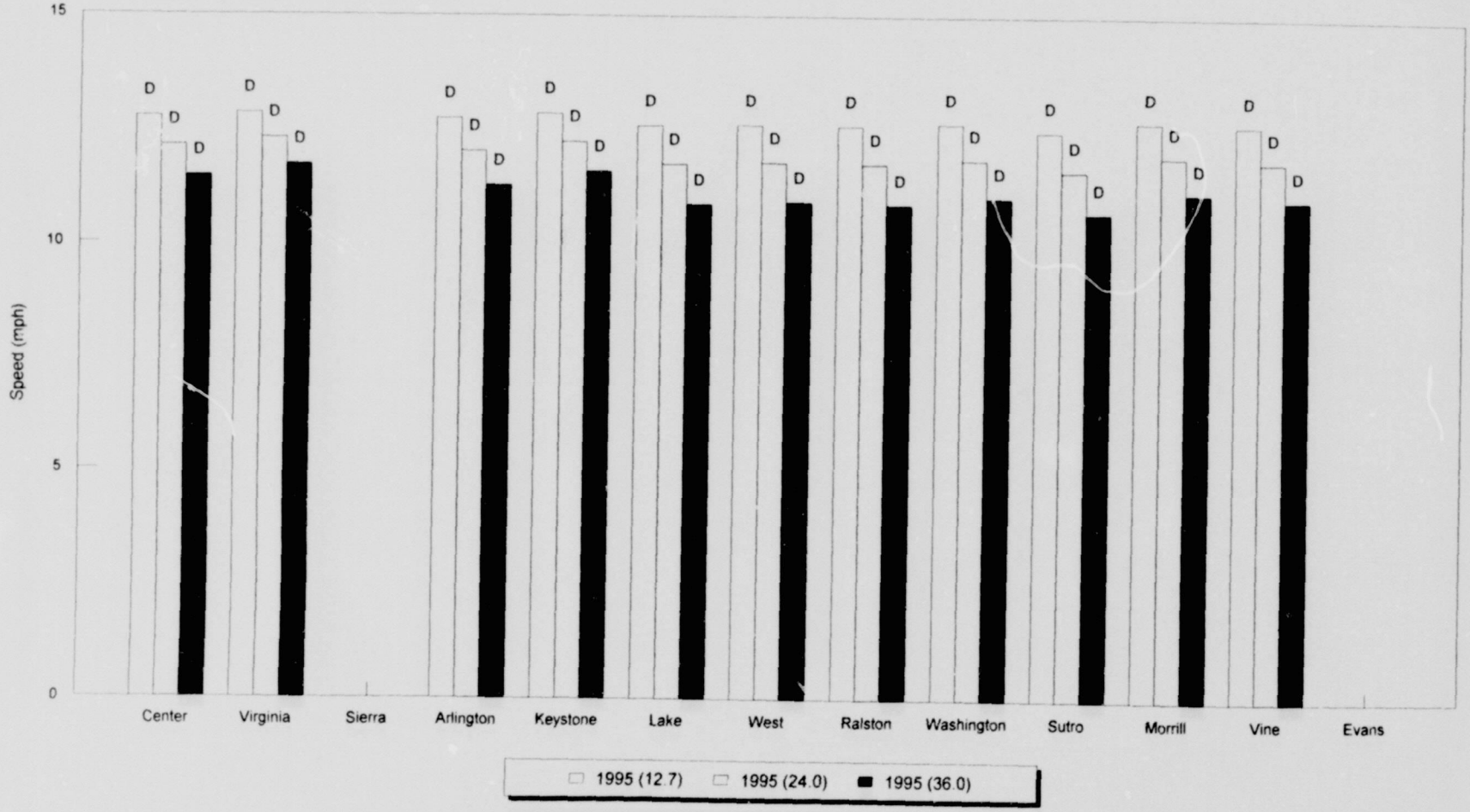
2000 Level of Service
Without Train

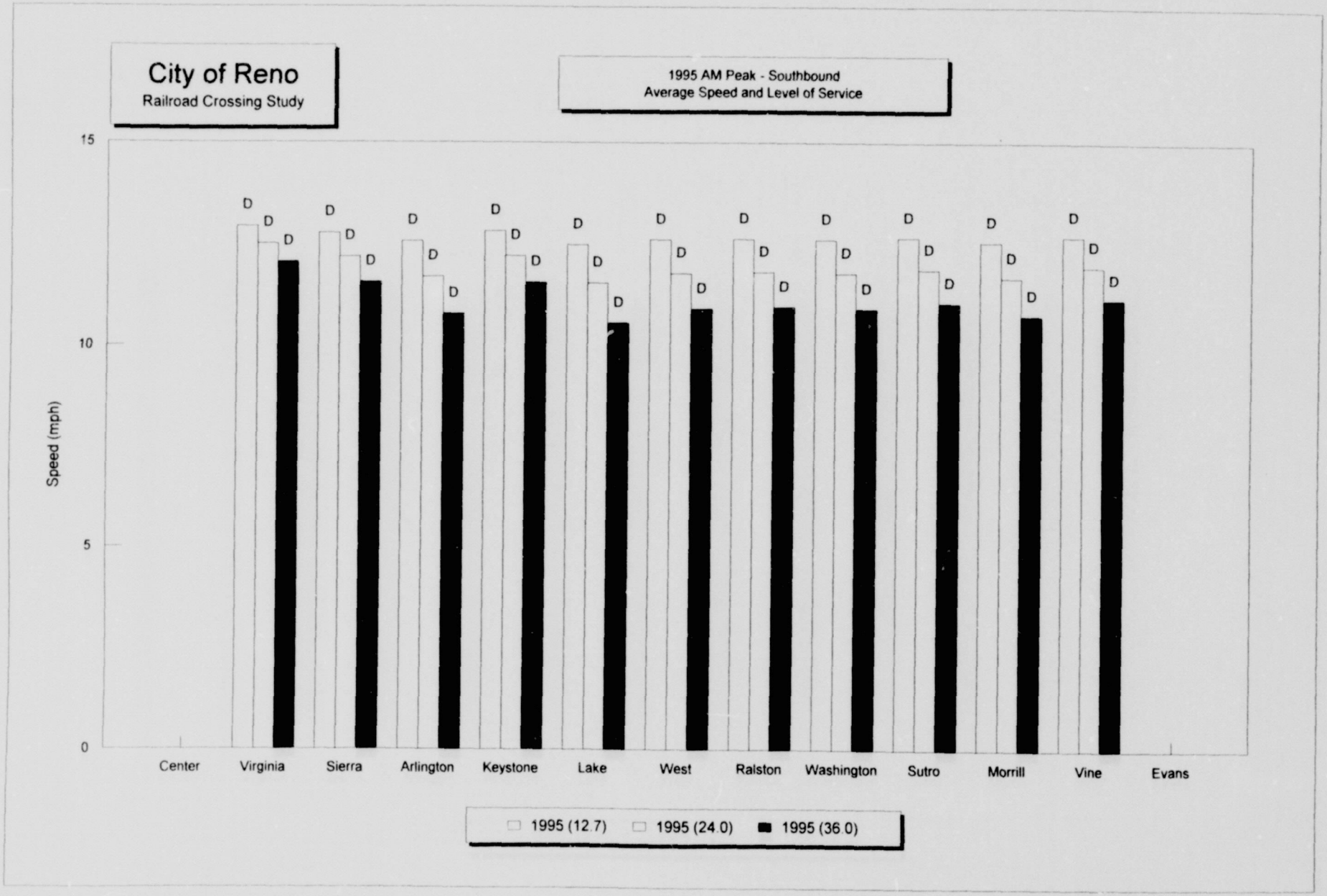
Arterial	Northbound am	Northbound pm	Northbound off	Southbound am	Southbound pm	Southbound off
Center	C	C	C			
Virginia	C	C	C	C	C	C
Sierra				C	C	C
Arlington	C	C	C	C	C	C
Keystone	C	C	C	C	C	C
Lake	C	C	C	C	C	C
West	C	C	C	C	C	C
Ralston	C	C	C	C	C	C
Washington	C	C	C	C	C	C
Sutro	C	C	C	C	C	C
Morrill	C	C	C	C	C	C
Vine	C	C	C	C	C	C
Evans	C	C	C	C	C	C

City of Reno

Railroad Crossing Study

1995 AM Peak - Northbound
Average Speed and Level of Service

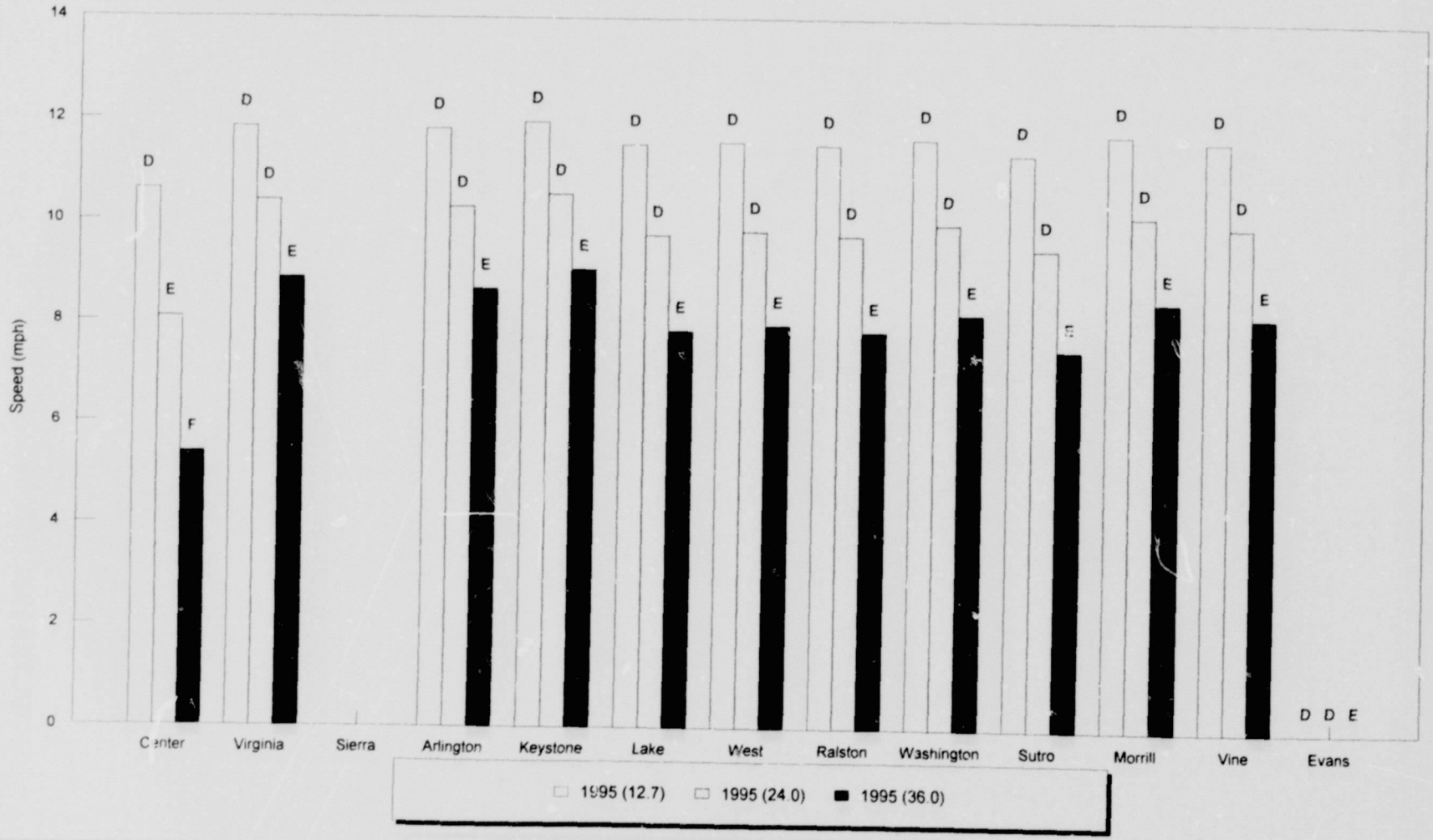



City of Reno
Railroad Crossing Study
1995 AM Peak - Southbound
Average Speed and Level of Service
Speed (mph)
15
10
5
0
D
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
1995 (12.7)
1995 (24.0)
1995 (36.0)

City of Reno

Railroad Crossing Study

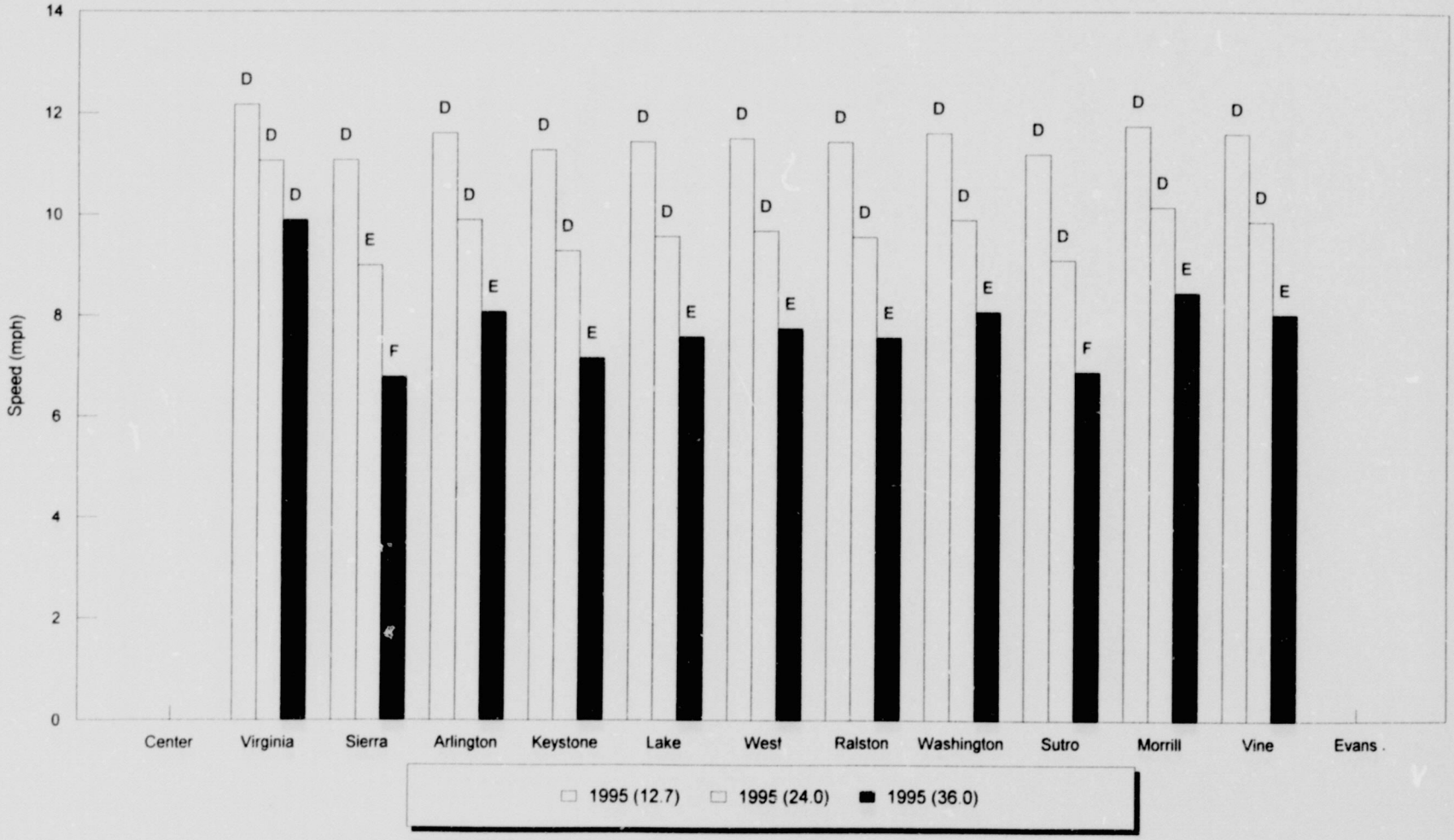
1995 PM Peak - Northbound
Average Speed and Level of Service



City of Reno

Railroad Crossing Study

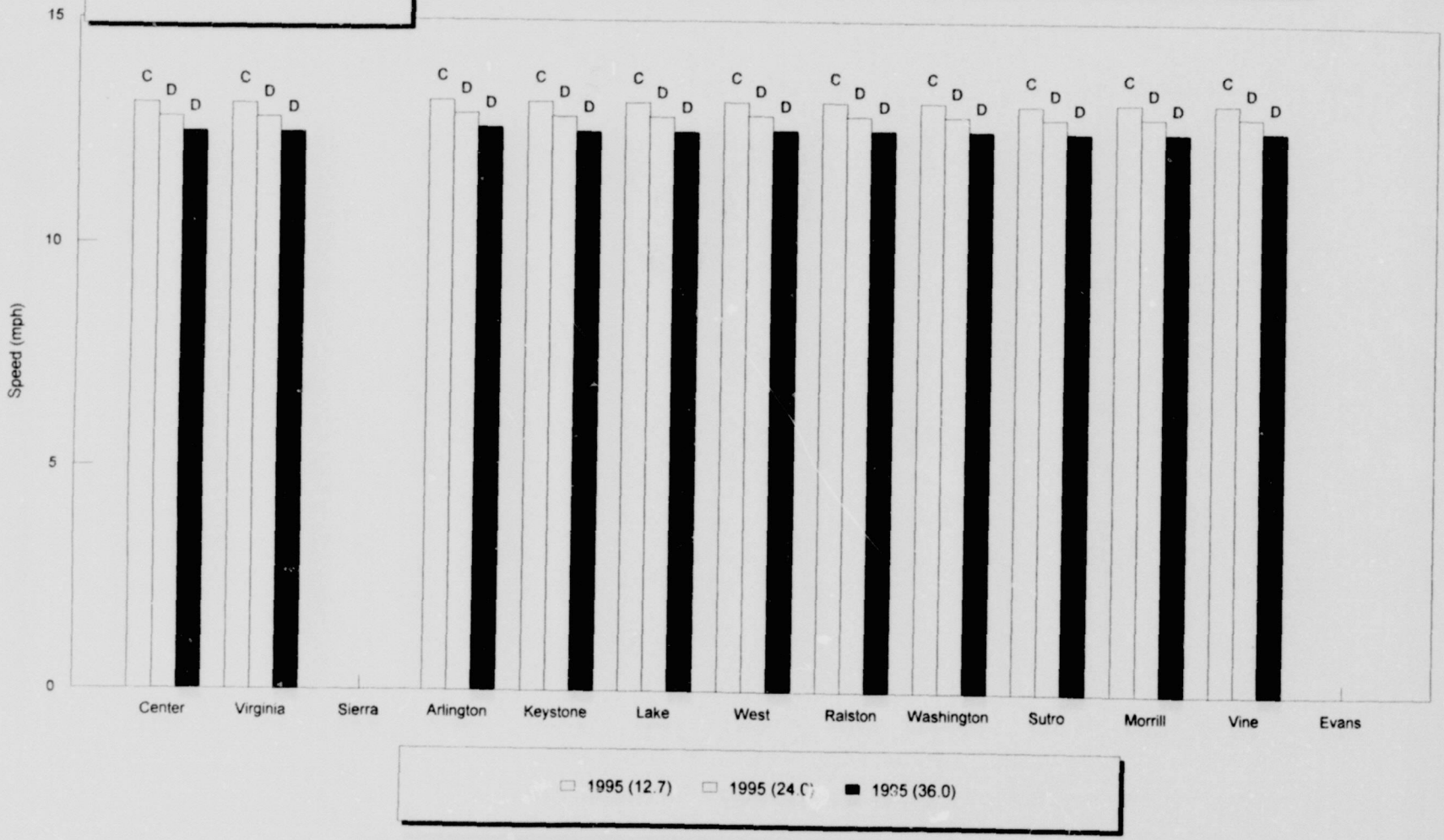
1995 PM Peak - Southbound
Average Speed and Level of Service



City of Reno

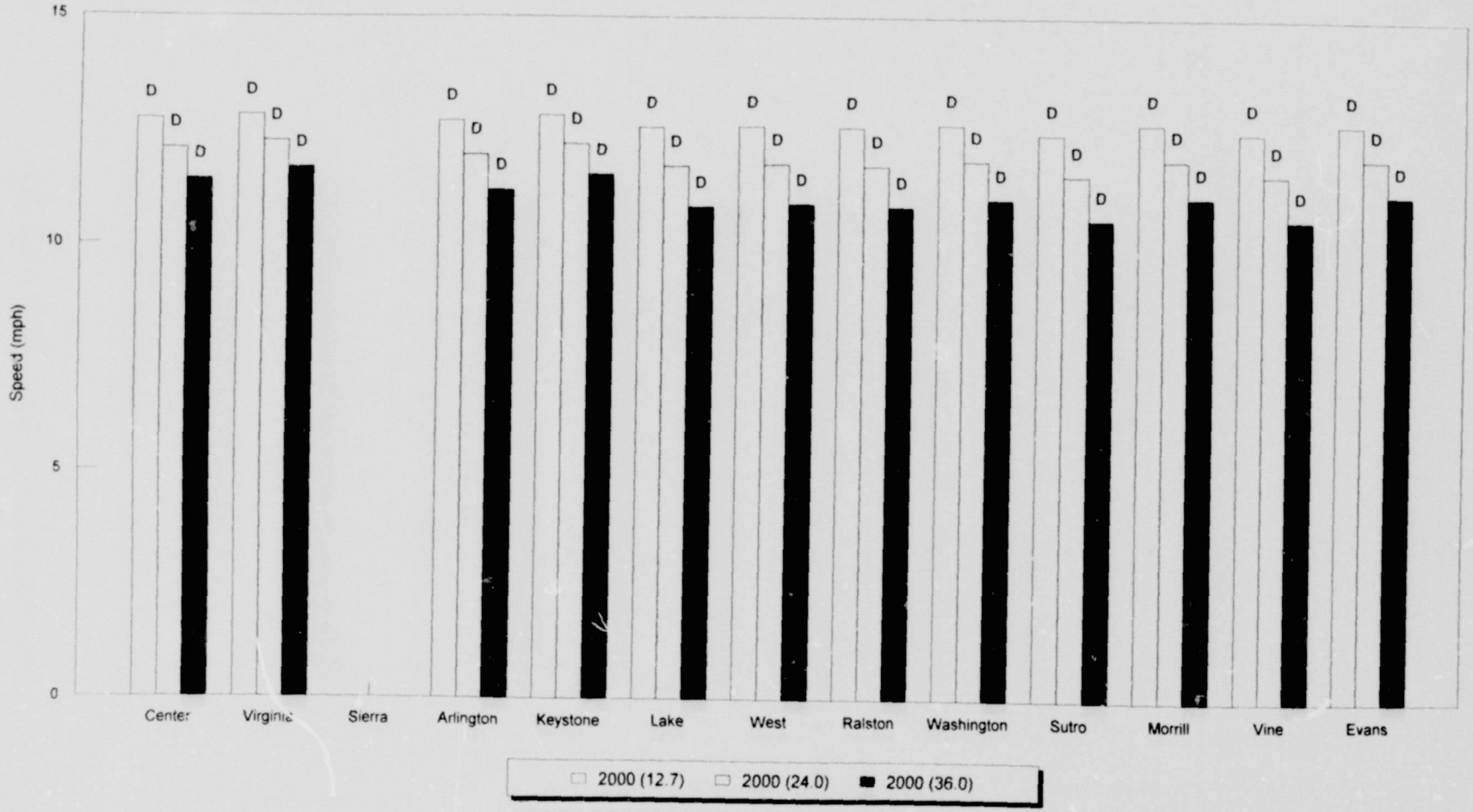
Railroad Crossing Study

1995 Off Peak - Northbound
Average Speed and Level of Service



City of Reno
Railroad Crossing Study

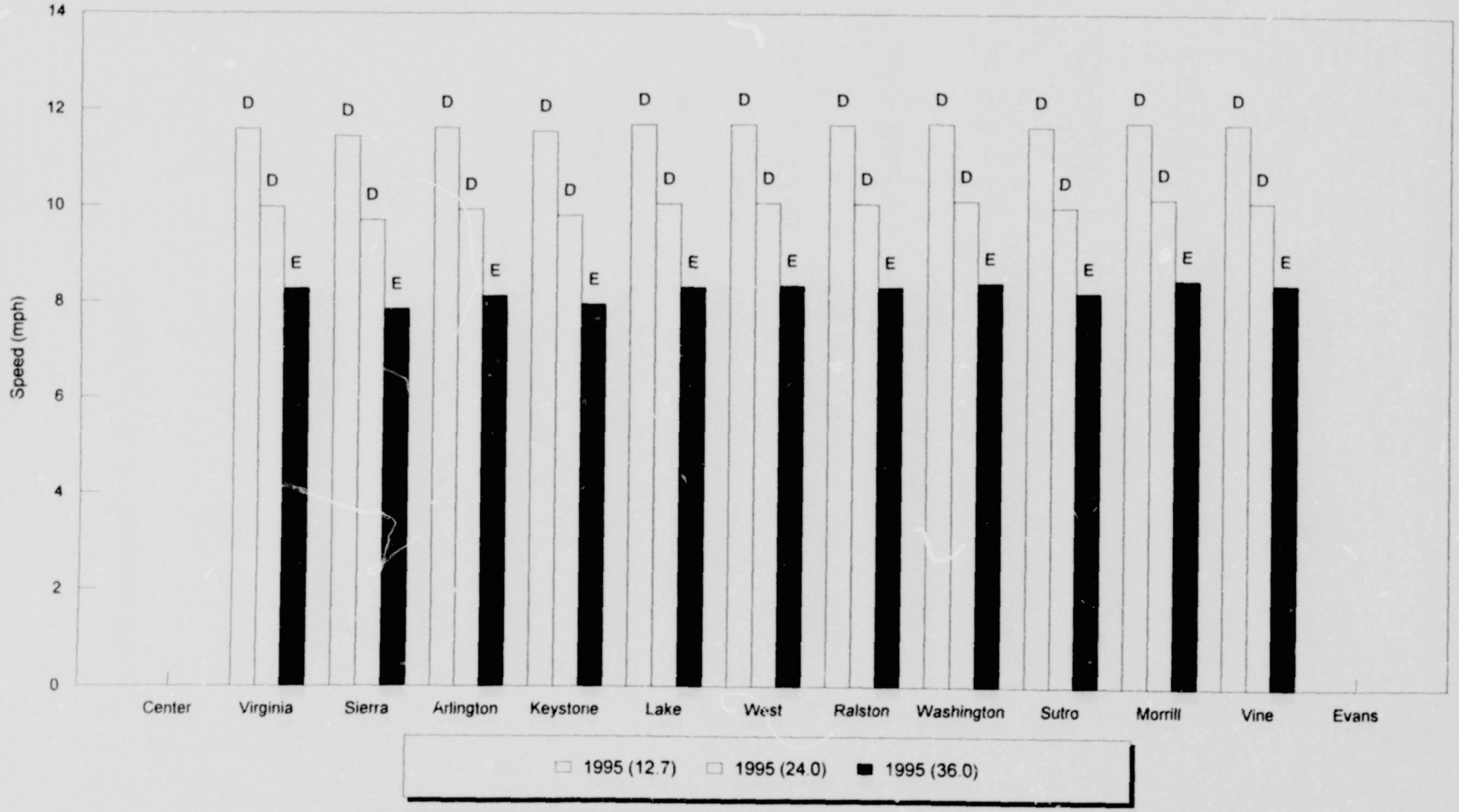
2000 AM Peak - Northbound
Average Speed and Level of Service



City of Reno

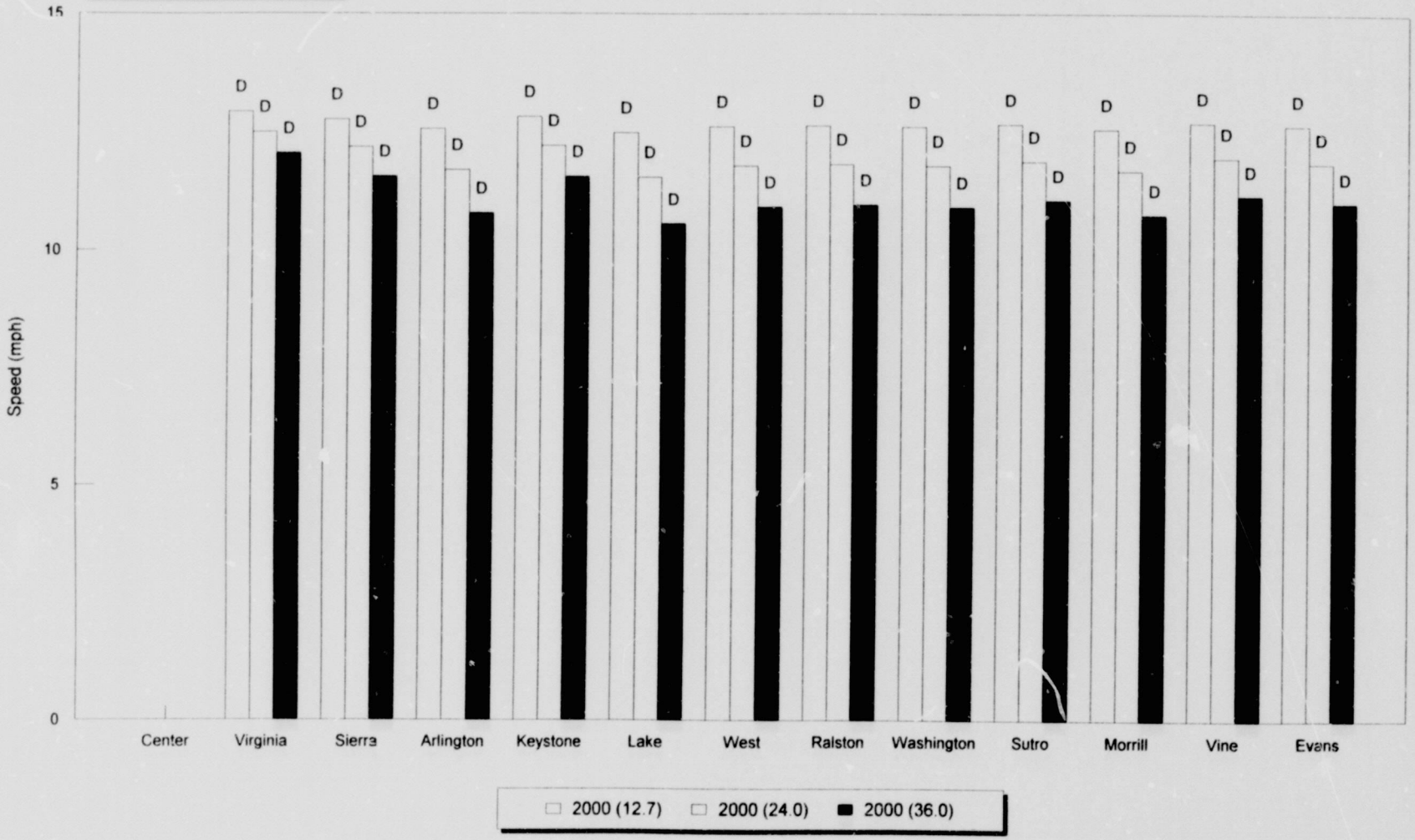
Railroad Crossing Study

1995 Off Peak - Southbound
Average Speed and Level of Service



City of Reno
Railroad Crossing Study

2000 AM Peak - Southbound
Average Speed and Level of Service



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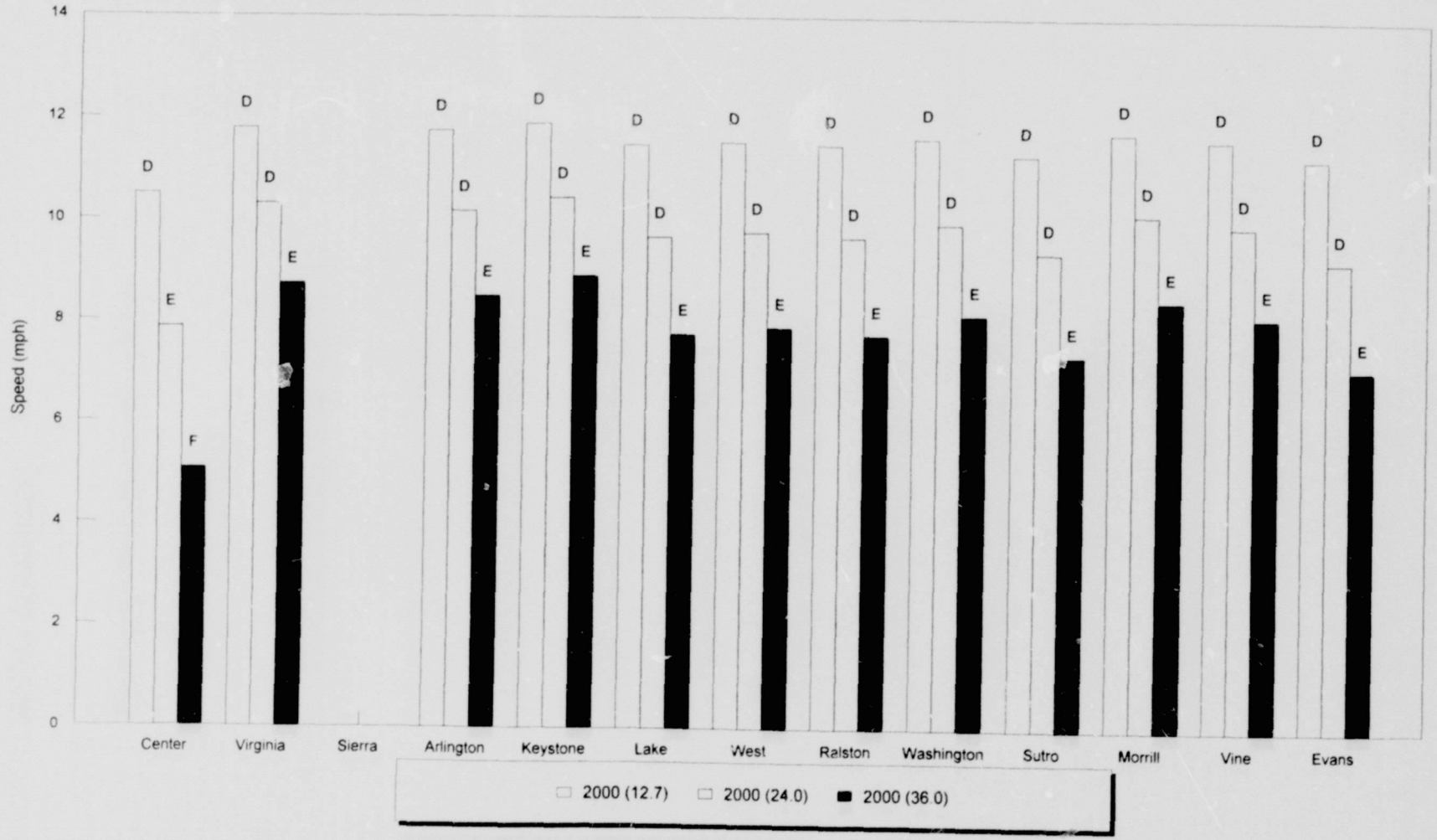
City of Reno

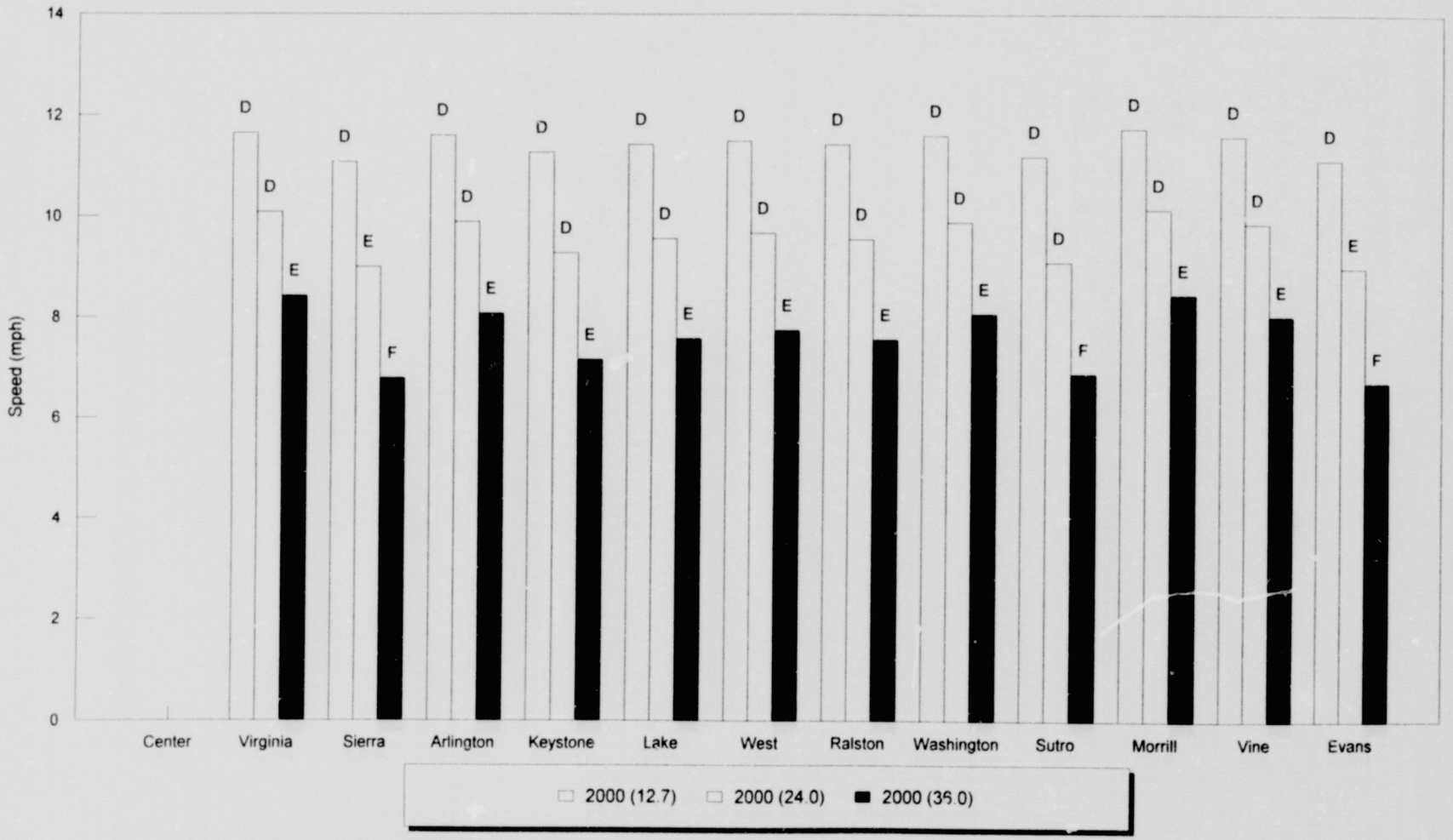
Railroad Crossing Study

2000 PM Peak - Northbound
Average Speed and Level of Service



City of Reno

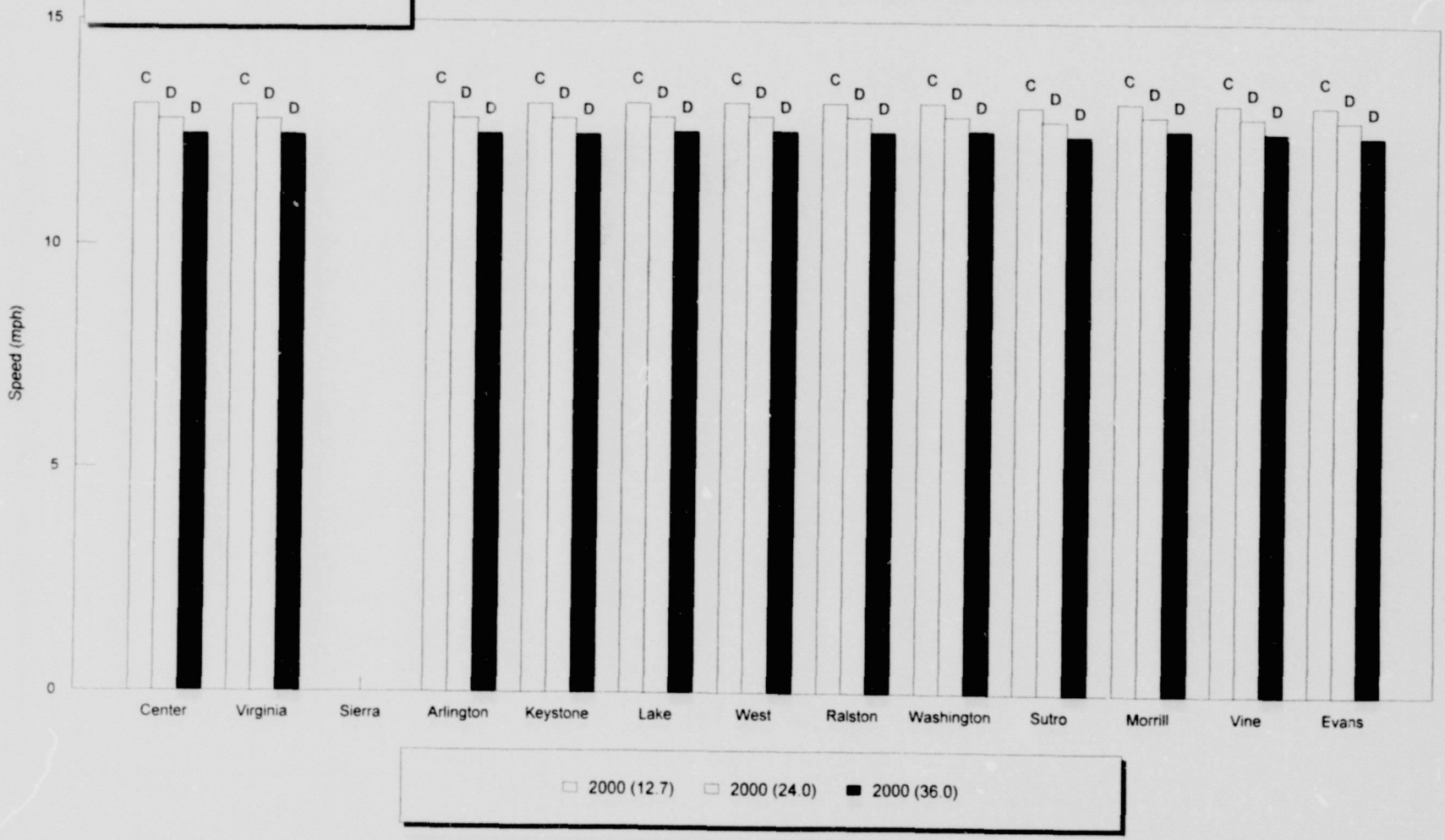
Railroad Crossing Study



City of Reno

Railroad Crossing Study

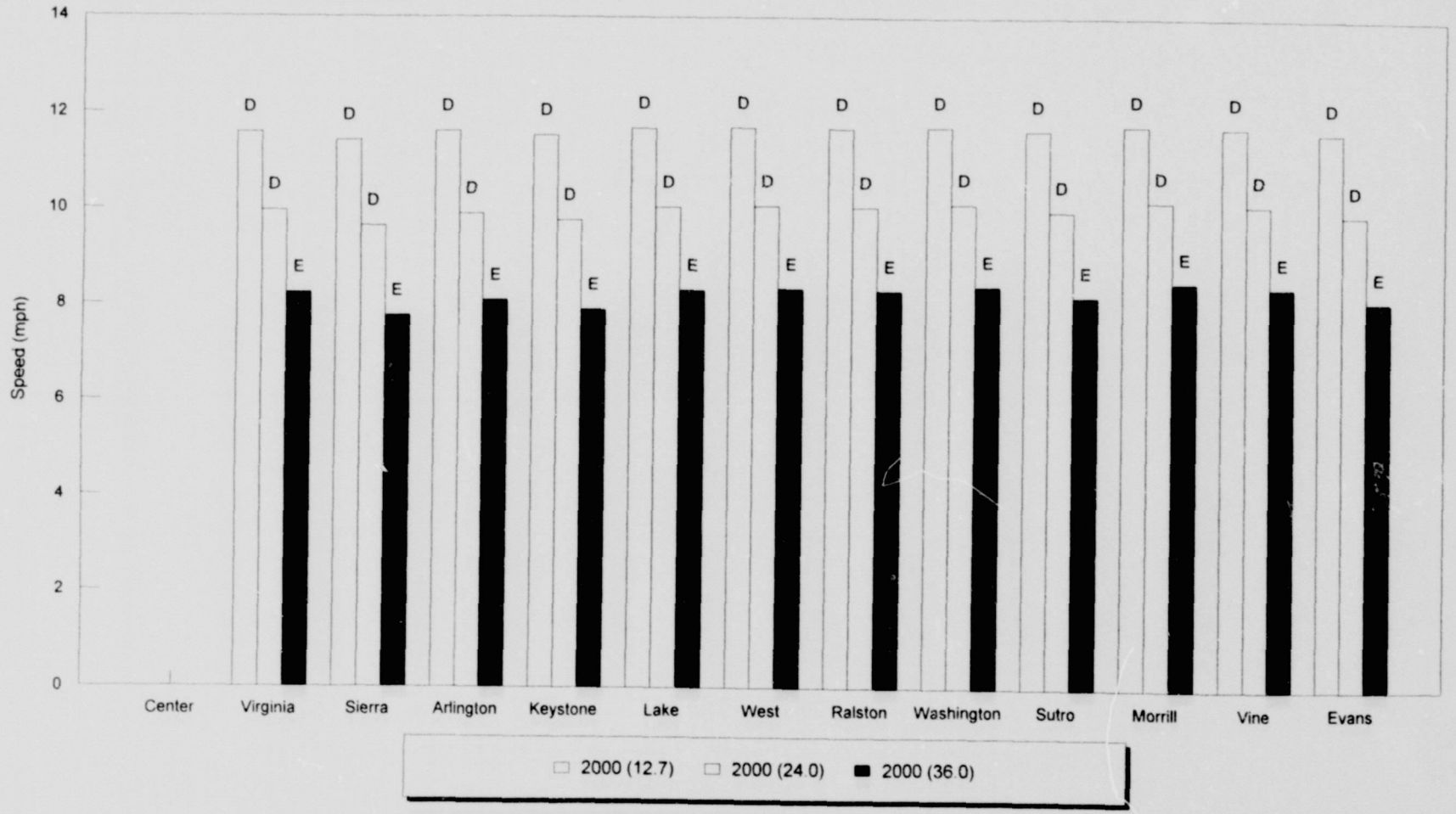
2000 Off Peak - Northbound
Average Speed and Level of Service



City of Reno

Railroad Crossing Study

2000 Off Peak - Southbound
Average Speed and Level of Service



Level of Service Summary

AM Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
Train/day		2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Train/peak		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
		1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	12.73	12.08	11.39	12.72	12.05	11.35							D	D	D	D	D	D						
Virginia	iii	12.82	12.26	11.65	12.81	12.23	11.61	12.94	12.51	12.06	12.94	12.51	12.06	D	D	D	D	D	D	D	D	D	D	D	D
Sierra	iii							12.76	12.17	11.54	12.76	12.17	11.54							D	D	D	D	D	D
Arlington	iii	12.70	11.95	11.18	12.68	11.91	11.09	12.47	11.51	10.50	12.47	11.51	10.50	D	D	D	D	D	D	D	D	D	D	D	D
Keystone	iii	12.82	12.18	11.50	12.80	12.14	11.44	12.79	12.15	11.48	12.79	12.15	11.48	D	D	D	D	D	D	D	D	D	D	D	D
Lake	iii	12.58	11.73	10.82	12.57	11.71	10.79	12.44	11.48	10.42	12.44	11.48	10.42	D	D	D	D	D	D	D	D	D	D	D	D
West	iii	12.60	11.77	10.88	12.59	11.75	10.85	12.60	11.76	10.87	12.60	11.76	10.87	D	D	D	D	D	D	D	D	D	D	D	D
Ralston	iii	12.58	11.73	10.82	12.57	11.70	10.78	12.61	11.79	10.92	12.61	11.79	10.92	D	D	D	D	D	D	D	D	D	D	D	D
Washington	iii	12.65	11.85	11.01	12.64	11.84	10.99	12.59	11.75	10.86	12.59	11.75	10.86	D	D	D	D	D	D	D	D	D	D	D	D
Sutro	iii	12.46	11.56	10.61	12.44	11.53	10.55	12.66	11.87	11.04	12.66	11.87	11.04	D	D	D	D	D	D	D	D	D	D	D	D
Morrill	iii	12.71	11.95	11.15	12.64	11.83	10.97	12.52	11.62	10.66	12.52	11.62	10.66	D	D	D	D	D	D	D	D	D	D	D	D
Vine	iii	12.64	11.84	10.99	12.46	11.51	10.49	12.70	11.95	11.15	12.70	11.95	11.15	D	D	D	D	D	D	D	D	D	D	D	D
Evans	iii	12.49	11.55	10.56	12.70	11.96	11.17	12.65	11.85	11.01	12.65	11.85	11.01	D	D	D	D	D	D	D	D	D	D	D	D

PM Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
Train/day		2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Train/peak		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
		2.159	4.08	6.12	2.159	4.08	6.12	2.159	4.08	6.12	2.159	4.08	6.12	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	10.62	8.09	5.40	10.54	7.94	5.17							D	E	F	D	E	F						
Virginia	iii	11.84	10.40	8.87	11.80	10.31	8.74	12.26	11.23	10.13	11.86	10.10	8.45	D	D	E	D	D	E	D	D	D	D	D	E
Sierra	iii							10.91	8.88	6.30	10.91	8.88	6.30							D	E	F	D	E	F
Arlington	iii	11.71	10.09	8.37	11.66	9.98	8.21	11.46	9.61	7.64	11.46	9.61	7.64	D	D	E	D	D	E	D	D	E	D	D	E
Keystone	iii	11.88	10.41	8.84	11.83	10.31	8.70	10.95	8.67	6.25	10.95	8.67	6.25	D	D	E	D	D	E	D	E	F	D	E	F
Lake	iii	11.48	9.85	7.70	11.45	9.60	7.63	11.37	9.44	7.39	11.37	9.44	7.39	D	D	E	D	D	E	D	D	E	D	D	E
West	iii	11.53	9.74	7.84	11.50	9.69	7.77	11.44	9.56	7.58	11.44	9.56	7.58	D	D	E	D	D	E	D	D	E	D	D	E
Ralston	iii	11.48	9.64	7.69	11.45	9.58	7.60	11.36	9.42	7.36	11.36	9.42	7.36	D	D	E	D	D	E	D	D	E	D	D	E
Washington	iii	11.63	9.93	8.13	11.62	9.91	8.10	11.58	9.85	8.00	11.58	9.85	8.00	D	D	E	D	D	E	D	D	E	D	D	E
Sutro	iii	11.31	9.40	7.38	11.27	9.31	7.23	11.08	8.89	6.57	11.08	8.89	6.57	D	D	E	D	D	E	D	E	F	D	E	F
Morrill	iii	11.75	10.15	8.44	11.75	10.15	8.44	11.74	10.14	8.45	11.74	10.14	8.45	D	D	E	D	D	E	D	D	E	D	D	E
Vine	iii	11.62	9.91	8.09	11.60	9.88	8.06	11.56	9.81	7.94	11.56	9.81	7.94	D	D	E	D	D	E	D	D	E	D	D	E
Evans	iii	11.28	9.27	7.14	11.21	9.13	6.93	11.03	8.80	6.43	11.03	8.80	6.43	D	D	E	D	D	F	D	E	F	D	E	F

Off Peak

Year	Arterial Type	Average Speed-NB						Average Speed-SB						Level of Service - NB						Level of Service - SB					
Train/day		2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015	2007	2007	2007	2015	2015	2015
Train/peak		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
		0.396875	0.75	1.125	0.396875	0.75	1.125	2.159	4.08	6.12	2.159	4.08	6.12	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88	1.016	1.92	2.88
Center	iii	13.12	12.81	12.47	13.12	12.80	12.47							C	D	D	C	D	D						
Virginia	iii	13.11	12.80	12.47	13.11	12.80	12.46	11.80	10.37	8.65	11.57	9.92	8.18	C	D	D	C	D	D	D	D	E	D	D	E
Sierra	iii							11.65	10.08	8.41	11.37	9.55	7.81							D	D	E	D	D	E
Arlington	iii	13.21	12.92	12.61	13.17	12.85	12.50	11.66	10.00	8.22	11.59	9.85	8.01	C	D	D	C	D	D	D	D	E	D	D	E
Keystone	iii	13.18	12.85	12.51	13.17	12.85	12.50	11.62	9.94	8.16	11.49	9.69	7.78	C	D	D	C	D	D	D	D	E	D	D	E
Lake	iii	13.18	12.85	12.51	13.19	12.89	12.56	11.74	10.15	8.46	11.68	10.02	8.27	C	D	D	C	D	D	D	D	E	D	D	E
West	iii	13.19	12.89	12.56	13.20	12.89	12.57	11.75	10.17	8.48	11.69	10.05	8.30	C	D	D	C	D	D	D	D	E	D	D	E
Ralston	iii	13.20	12.89	12.57	13.19	12.89	12.56	11.68	10.02	8.26	11.66	9.98	8.21	C	D	D	C	D	D	D	D	E	D	D	E
Washington	iii	13.20	12.89	12.56	13.20	12.91	12.59	11.79	10.23	8.57	11.72	10.11	8.39	C	D	D	C	D	D	D	D	E	D	D	E
Sutro	iii	13.14	12.85	12.54	13.12	12.81	12.48	11.70	10.08	8.32	11.63	9.93	8.13	C	D	D	C	D	D	D	D	E	D	D	E
Morrill	iii	13.20	12.88	12.54	13.22	12.93	12.62	11.81	10.27	8.64	11.76	10.17	8.49	C	D	D	C	D	D	D	D	E	D	D	E
Vine	iii	13.21	12.92	12.61	13.20	12.90	12.58	11.77	10.20	8.53	11.72	10.10	8.37	C	D	D	C	D	D	D	D	E	D	D	E
Evans	iii	13.20	12.90	12.59	13.18	12.88	12.52	11.70	10.07	8.33	11.62	9.92	8.12	C	D	D	C	D	D	D	D	E	D	D	E

	2007 Northbound AM Peak			2007 Southbound AM Peak			2007 TOTAL AM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	11	11	11	11	11	11	22	22	22
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
total	11	11	11	11	11	11	22	22	22

	2007 Northbound PM Peak			2007 Southbound PM Peak			2007 TOTAL PM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	11	10	0	11	8	1	22	18	1
E	0	1	10	0	3	7	0	4	17
F	0	0	1	0	0	3	0	0	4
total	11	11	11	11	11	11	22	22	22

	2007 Northbound OFFPeak			2007 Southbound OFFPeak			2007 TOTAL OFFPeak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	11	0	0	0	0	0	11	0	0
D	0	11	11	11	11	0	11	22	11
E	0	0	0	0	0	11	0	0	11
F	0	0	0	0	0	0	0	0	0
total	11	11	11	11	11	11	22	22	22

	2015 Northbound AM Peak			2015 Southbound AM Peak			2015 TOTAL AM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	12	12	12	12	12	12	24	24	24
E	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0
total	12	12	12	12	12	12	24	24	24

	2015 Northbound PM Peak			2015 Southbound PM Peak			2015 TOTAL PM Peak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0
D	12	11	0	12	8	0	24	19	0
E	0	1	10	0	4	8	0	5	18
F	0	0	2	0	0	4	0	0	6
total	12	12	12	12	12	12	24	24	24

	2015 Northbound OFFPeak			2015 Southbound OFFPeak			2015 TOTAL OFFPeak		
	12.7	24	36	12.7	24	36	12.7	24	36
A	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0
C	12	0	0	0	0	0	12	0	0
D	0	12	12	12	12	0	12	24	12
E	0	0	0	0	0	12	0	0	12
F	0	0	0	0	0	0	0	0	0
total	12	12	12	12	12	12	24	24	24

CITY OF RENO - RAILROAD DELAY STUDY
Level of Service Analysis

AM PEAK - 2007
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	[illegible]	25	0.04	1370.00	57.84	265	30	60	152	200	3	2400	0.09518	-0.09807	0.098082	0.0962	0.44	13.47
Virginia	NB	[illegible]	25	0.04	907.50	33.28	265	30	60	132	173	2	1800	0.09800	-0.07327	0.073276	0.0960	0.41	13.46
Arlington	NB	[illegible]	25	0.11	984.50	45.12	265	30	60	165	222	2	1800	0.09636	-0.13371	0.133734	0.0964	0.17	13.54
Keystone	NB	[illegible]	25	0.11	1430.00	56.80	265	30	60	143	191	3	2400	0.09614	-0.09462	0.094623	0.0961	0.15	13.54
Lake	NB	[illegible]	25	0.10	489.50	30.13	265	30	60	221.5909	254	2	1800	0.09590	-0.08019	0.0802	0.0959	0.19	13.54
West	NB	[illegible]	25	0.11	206.25	12.70	265	30	60	221.5909	248	1	800	0.09576	-0.04288	0.042882	0.0958	0.19	13.54
Ralston	NB	[illegible]	25	0.11	247.50	15.23	265	30	60	221.5909	255	1	800	0.09591	-0.06154	0.061553	0.0959	0.19	13.54
Washington	NB	[illegible]	25	0.11	123.75	7.62	265	30	60	221.5909	237	1	800	0.09545	-0.01553	0.015536	0.0955	0.17	13.54
Sutro	NB	[illegible]	25	0.04	759.00	46.72	265	30	60	221.5909	277	2	1800	0.09641	-0.14319	0.143214	0.0964	0.57	13.47
Morrill	NB	[illegible]	25	0.16	16.50	1.02	265	30	60	221.5909	224	1	800	0.09506	-0.00028	0.000278	0.0951	0.12	13.55
Vine	NB	[illegible]	25	0.10	269.50	16.59	265	30	60	221.5909	238	2	1800	0.09550	-0.0184	0.018404	0.0955	0.19	13.54
Evans	NB	[illegible]	25	0.10	787.60	48.46	265	30	60	221.5909	279	2	1800	0.09646	-0.15401	0.154037	0.0965	0.21	13.54

AM PEAK - 2007
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	[illegible]	25	0.03	742.50	27.23	265	30	60	132	132	2	1600	0.09562	-0.04924	0.049241	0.0958	0.58	13.41
Sierra	SB	[illegible]	25	0.03	2320.00	97.96	265	30	60	152	184	3	2400	0.09696	-0.27643	0.27647	0.0970	0.85	13.42
Arlington	SB	[illegible]	25	0.10	805.50	36.92	265	30	60	165	269	2	1800	0.09800	-0.60873	0.606945	0.0982	0.17	13.54
Keystone	SB	[illegible]	25	0.06	1170.00	46.48	265	30	60	143	187	2	1800	0.09611	-0.08998	0.089994	0.0961	0.27	13.51
Lake	SB	[illegible]	25	0.10	400.50	24.65	265	30	60	221.5909	285	2	1800	0.09640	-0.14172	0.141746	0.0964	0.20	13.54
West	SB	[illegible]	25	0.10	168.75	10.39	265	30	60	221.5909	248	1	800	0.09649	-0.15921	0.159265	0.0965	0.19	13.54
Ralston	SB	[illegible]	25	0.10	202.50	12.46	265	30	60	221.5909	243	1	800	0.09562	-0.02879	0.02879	0.0956	0.20	13.54
Washington	SB	[illegible]	25	0.10	101.25	6.23	265	30	60	221.5909	248	1	800	0.09575	-0.04134	0.041349	0.0958	0.19	13.54
Sutro	SB	[illegible]	25	0.11	621.00	38.22	265	30	60	271.5909	234	2	1800	0.09519	-0.00261	0.002615	0.0952	0.22	13.54
Morrill	SB	[illegible]	25	0.11	13.50	0.83	265	30	60	221.5909	265	1	800	0.09733	-0.37608	0.376282	0.0975	0.17	13.54
Vine	SB	[illegible]	25	0.11	220.50	13.57	265	30	60	221.5909	223	2	1800	0.09502	-4.7E-05	0.000047	0.0950	0.18	13.54
Evans	SB	[illegible]	25	0.10	644.40	39.66	265	30	60	221.5909	235	2	1800	0.09540	-0.01234	0.012344	0.0954	0.21	13.54

PM PEAK - 2007
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	[illegible]	25	0.04	1370.00	103.13	265	30	60	271	397	3	2400	0.09709	-0.30572	0.305767	0.0971	1.50	13.47
Virginia	NB	[illegible]	40	0.04	742.50	33.41	265	30	60	182	216	2	1800	0.09600	-0.07387	0.073876	0.0960	1.08	13.46
Arlington	NB	[illegible]	30	0.11	805.50	36.70	265	30	60	164	228	2	1800	0.09610	-0.08891	0.088919	0.0961	0.18	13.54
Keystone	NB	[illegible]	40	0.11	1170.00	49.40	265	30	60	152	208	3	2400	0.09599	-0.07179	0.071792	0.0960	0.25	13.54
Lake	NB	[illegible]	25	0.10	400.50	24.65	265	30	60	221.5909	257	2	1800	0.09574	-0.04044	0.040439	0.0957	0.20	13.54
West	NB	[illegible]	25	0.11	168.75	10.39	265	30	60	221.5909	251	1	800	0.09562	-0.02879	0.02879	0.0956	0.19	13.54
Ralston	NB	[illegible]	25	0.11	202.50	12.46	265	30	60	221.5909	258	1	800	0.09575	-0.04134	0.041349	0.0958	0.19	13.54
Washington	NB	[illegible]	30	0.11	101.25	6.23	265	30	90	221.5909	238	1	800	0.09537	-0.01042	0.010418	0.0954	0.18	13.54
Sutro	NB	[illegible]	40	0.04	621.00	38.22	265	30	60	221.5909	283	2	1800	0.09615	-0.09638	0.096392	0.0962	0.75	13.47
Morrill	NB	[illegible]	25	0.16	13.50	0.83	265	30	60	221.5909	224	1	800	0.09505	-0.00019	0.000186	0.0950	0.12	13.55
Vine	NB	[illegible]	25	0.10	220.50	13.57	265	30	60	221.5909	240	2	1800	0.09540	-0.01234	0.012344	0.0954	0.19	13.54
Evans	NB	[illegible]	25	0.10	621.00	38.22	265	30	60	221.5909	283	2	1800	0.09615	-0.09638	0.096392	0.0962	0.22	13.54

PM PEAK - 2007
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	[illegible]	25	0.03	907.50	40.84	265	30	60	162	162	2	1800	0.09823	-0.10982	0.109838	0.0982	1.51	13.41
Sierra	SB	[illegible]	25	0.03	2320.00	96.60	265	30	60	153	228	3	2400	0.09699	-0.28	0.280042	0.0970	1.96	13.42
Arlington	SB	[illegible]	30	0.10	984.50	44.85	265	30	60	164	341	2	1800	0.09835	-0.13212	0.132141	0.0964	0.19	13.54
Keystone	SB	[illegible]	40	0.06	1430.00	80.38	265	30	60	152	237	2	1800	0.09883	-0.23708	0.237108	0.0989	0.49	13.51
Lake	SB	[illegible]	25	0.10	489.50	30.13	265	30	60	221.5909	371	2	1800	0.09590	-0.08019	0.0802	0.0959	0.21	13.54
West	SB	[illegible]	25	0.10	206.25	12.70	265	30	60	221.5909	267	1	800	0.09576	-0.04288	0.042882	0.0958	0.20	13.54
Ralston	SB	[illegible]	25	0.10	247.50	15.23	265	30	60	221.5909	259	1	800	0.09591	-0.06154	0.061553	0.0959	0.20	13.54
Washington	SB	[illegible]	30	0.10	123.75	7.62	265	30	60	221.5909	268	1	800	0.09545	-0.01553	0.015536	0.0955	0.19	13.54
Sutro	SB	[illegible]	40	0.11	759.00	46.72	265	30	60	221.5909	242	2	1800	0.09641	-0.14319	0.143214	0.0964	0.30	13.54
Morrill	SB	[illegible]	25	0.11	16.50	1.02	265	30	60	221.5909	301	1	800	0.09506	-0.00028	0.000278	0.0951	0.17	13.54
Vine	SB	[illegible]	25	0.11	269.50	16.59	265	30	60	221.5909	224	2	1800	0.09550	-0.0184	0.018404	0.0955	0.18	13.54
Evans	SB	[illegible]	25	0.10	759.00	46.72	265	30	60	221.5909	244	2	1800	0.09641	-0.14319	0.143214	0.0964	0.23	13.54

OFF PEAK - 2007
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	[illegible]	25	0.04	548.00	33.73	265	30	60	221.59	245	3	2400	0.09500	-0.03389	0.033894	0.0950	0.47	13.47
Virginia	NB	[illegible]	40	0.04	363.00	22.34	265	30	60	221.59	245	2	1800	0.09500	-0.03327	0.033269	0.0950	0.49	13.46
Arlington	NB	[illegible]	30	0.11	393.80	24.24	265	30	60	221.59	222	2	1800	0.09500	-0.0391	0.039108	0.0950	0.19	13.54
Keystone	NB	[illegible]	40	0.11	572.00	35.21	265	30	60	221.59	247	3	2400	0.09567	-0.03669	0.036687	0.0957	0.18	13.54
Lake	NB	[illegible]	25	0.10	196.80	12.05	265	30	60	221.59	246	2	1800	0.09567	-0.00974	0.009742	0.0957	0.18	13.54
West	NB	[illegible]	25	0.11	82.50	5.08	265	30	60	221.59	234	1	800	0.09646	-0.00693	0.006927	0.0965	0.18	13.54
Ralston	NB	[illegible]	25	0.11	99.00	6.09	265	30	60	221.59	232	1	800	0.09714	-0.00998	0.009982	0.0971	0.18	13.54
Washington	NB	[illegible]	30	0.11	49.50	3.05	265	30	60	221.56	234	1	800	0.09572	-0.0025	0.0025	0.0957	0.17	13.54
Sutro	NB	[illegible]	40	0.04	303.60	18.69	265	30	60	221.59	227	2	1800	0.09515	-0.02332	0.023326	0.0952	0.47	13.47
Morrill	NB	[illegible]	25	0.16	6.60	0.41	265	30	60	221.59	241	1	800	0.09536	-4.5E-05	0.000045	0.0954	0.12	13.55
Vine	NB	[illegible]	25	0.10	107.80	6.64	265	30	60	221.59	222	2	1800	0.09509	-0.00298	0.002983	0.0951	0.18	13.54
Evans	NB	[illegible]	25	0.10	303.60	18.69	265	30	60	221.59	228	2	1800	0.09556	-0.02332	0.023326	0.0956	0.19	13.54

OFF PEAK - 2007
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	[illegible]	25	0.03	297.00	18.28	265	30	60	221.5909	240	2	1600	0.09555	-0.02233	0.022328	0.0955	2.24	13.41
Sierra	SB	[illegible]	25	0.03	928.00	57.12	265	30	60	221.5909	264	3	2400	0.09614	-0.09567	0.095674	0.0962	2.27	13.42
Arlington	SB	[illegible]	30	0.10	322.20	19.83	265	30	60	221.5909	242	2	1600	0.09673	-0.21262	0.212665	0.0968	0.63	13.54
Keystone	SB	[illegible]	40	0.06	468.00	28.81	265	30	60	221.5909	253	2	1600	0.09559	-0.02625	0.026252	0.0956	1.06	13.51
Lake	SB	[illegible]	25	0.10	160.20	9.86	265	30	60	221.5909	231	2	1600	0.09586	-0.05507	0.055074	0.0959	0.61	13.54
West	SB	[illegible]	25	0.10	67.50	4.15	265	30	60	221.5909	230	1	800	0.09559	-0.02508	0.025083	0.0956	0.59	13.54
Ralston	SB	[illegible]	25	0.10	81.00	4.99	265	30	60	221.5909	231	1	800	0.09525	-0.00464	0.004642	0.0952	0.12	13.54
Washington	SB	[illegible]	30	0.10	40.50	2.49	265	30	60	221.5909	226	1	800	0.09530	-0.00868	[illegible]	0.0953	0.64	13.54
Sutro	SB	[illegible]	40	0.11	248.40	15.29	265	30	60	221.5909	237	2	1600	0.09507	-0.00042	[illegible]	0.0951	0.59	13.54
Morrill	SB	[illegible]	25	0.11	5.40	0.33	265	30	60	221.5909	222	1	800	0.09592	-0.06199	0.061997	0.0959	0.56	13.54
Vine	SB	[illegible]	25	0.11	88.20	5.43	265	30	60	221.5909	227	2	1600	0.09501	-7.5E-08	7.5E-08	0.0950	0.56	13.54
Evans	SB	[illegible]	25	0.10	248.40	15.29	265	30	60	221.5909	237	2	1600	0.09516	-0.00199	0.001985	0.0952	0.63	13.54

2007 Level of Service

Arterial	Northbound am	Northbound pm	Northbound off	Southbound am	Southbound pm	Southbound off
Center	C	C	C			
Virginia	C	C	C	C	C	C
Sierra				C	C	C
Arlington	C	C	C	C	C	C
Keystone	C	C	C	C	C	C
Lake	C	C	C	C	C	C
West	C	C	C	C	C	C
Ralston	C	C	C	C	C	C
Washington	C	C	C	C	C	C
Sutro	C	C	C	C	C	C
Morrill	C	C	C	C	C	C
Vine	C	C	C	C	C	C
Evans	C	C	C	C	C	C

CITY OF RENO - RAILROAD DELAY STUDY
Level of Service Analysis

AM PEAK - 2015
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	*	25	0.04	1450.00	81.22	265	30	60	152	204	3	2400	0.09623	-0.1097	0.109713	0.0962	0.44	13.47
Virginia	NB	*	25	0.04	979.00	35.90	265	30	60	132	178	2	1600	0.09608	-0.08513	0.085136	0.0961	0.41	13.46
Arlington	NB	*	25	0.11	1061.50	48.85	265	30	60	165	229	2	1600	0.09647	-0.1551	0.15512	0.0965	0.17	13.54
Keystone	NB	*	25	0.11	1545.50	81.39	265	30	60	143	198	3	2400	0.09623	-0.1103	0.11031	0.0962	0.16	13.54
Lake	NB	*	25	0.10	528.00	32.50	265	30	60	221.5909	257	2	1600	0.09597	-0.06993	0.069937	0.0960	0.19	13.54
West	NB	*	25	0.11	225.50	13.88	265	30	60	221.5909	251	1	800	0.09583	-0.05117	0.051184	0.0958	0.19	13.54
Ralston	NB	*	25	0.11	269.50	16.59	265	30	60	221.5909	258	1	800	0.09600	-0.07284	0.072858	0.0960	0.19	13.54
Washington	NB	*	25	0.11	132.00	8.13	265	30	60	221.5909	238	1	800	0.09548	-0.01766	0.017665	0.0955	0.17	13.54
Sutro	NB	*	25	0.04	819.50	50.44	265	30	60	221.5909	282	2	1600	0.09652	-0.16653	0.166557	0.0965	[illegible]	[illegible]
Morrill	NB	*	25	0.16	16.50	1.02	265	30	60	221.5909	240	1	800	0.09506	-0.00028	0.000278	0.0951	0.12	13.55
Vine	NB	*	25	0.10	291.50	17.94	265	30	60	221.5909	285	2	1600	0.09554	-0.02151	0.021513	0.0955	0.19	13.54
Evans	NB	*	25	0.10	847.00	52.23	265	30	60	222	222	2	1600	0.09658	-0.17834	0.178376	0.0966	0.21	13.54

AM PEAK - 2015
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	*	25	0.03	801.00	29.37	265	30	60	132	132	2	1600	0.09588	-0.05722	0.057228	0.0959	0.58	13.41
Sierra	SB	*	25	0.03	2510.00	105.98	265	30	60	152	187	3	2400	0.09714	-0.32243	0.322485	0.0972	0.85	13.42
Arlington	SB	*	25	0.10	868.50	39.81	265	30	60	165	284	2	1600	0.09625	-0.10442	0.10443	0.0963	0.17	13.54
Keystone	SB	*	25	0.06	1264.50	50.23	265	30	60	143	192	2	1600	0.09620	-0.16514	0.16517	0.0962	0.27	13.51
Lake	SB	*	25	0.10	432.00	26.59	265	30	60	221.5909	292	2	1600	0.09651	-0.04699	0.046993	0.0965	0.20	13.54
West	SB	*	25	0.10	184.50	11.36	265	30	60	221.5909	250	1	800	0.09661	-0.03437	0.034373	0.0966	0.19	13.54
Ralston	SB	*	25	0.10	220.50	13.57	265	30	60	221.5909	245	1	800	0.09568	-0.04895	0.048958	0.0957	0.20	13.54
Washington	SB	*	25	0.10	108.00	6.65	265	30	60	221.5909	251	1	800	0.09581	-0.01185	0.011847	0.0958	0.19	13.54
Sutro	SB	*	25	0.11	670.50	41.27	265	30	60	221.5909	235	2	1600	0.09520	-0.11214	0.112153	0.0952	0.22	13.54
Morrill	SB	*	25	0.11	13.50	0.83	265	30	60	221.5909	269	1	800	0.09752	-0.00019	0.000186	0.0975	0.17	13.54
Vine	SB	*	25	0.11	238.50	14.68	265	30	60	221.5909	223	2	1600	0.09502	-0.01443	0.014431	0.0950	0.18	13.54
Evans	SB	*	25	0.10	693.00	42.74	265	30	60	222	237	2	1600	0.09544	-0.12012	0.120137	0.0955	0.21	13.54

PM PEAK - 2015
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	*	25	0.04	1450.00	109.15	265	30	60	271	406	3	2400	0.09721	-0.34157	0.341626	0.0973	1.50	13.47
Virginia	NB	*	40	0.04	801.00	36.05	265	30	60	162	224	2	1600	0.09608	-0.08562	0.085632	0.0961	1.08	13.46
Arlington	NB	*	30	0.11	868.50	39.57	265	30	60	164	235	2	1600	0.09619	-0.10317	0.103184	0.0962	0.18	13.54
Keystone	NB	*	40	0.11	1264.50	53.39	265	30	60	152	215	3	2400	0.09607	-0.08371	0.083716	0.0961	0.28	13.54
Lake	NB	*	25	0.10	432.00	26.59	265	30	60	221.5909	261	2	1600	0.09580	-0.04699	0.046993	0.0958	0.20	13.54
West	NB	*	25	0.11	184.50	11.36	265	30	60	221.5909	254	1	800	0.09568	-0.03437	0.034373	0.0957	0.19	13.54
Ralston	NB	*	25	0.11	220.50	13.57	265	30	60	221.5909	262	1	800	0.09581	-0.04895	0.048958	0.0958	0.19	13.54
Washington	NB	*	30	0.11	108.00	6.65	265	30	60	221.5909	240	1	800	0.09540	-0.01185	0.011847	0.0954	0.18	13.54
Sutro	NB	*	40	0.04	670.50	41.27	265	30	60	221.5909	289	2	1600	0.09824	-0.11214	0.112153	0.0983	0.75	13.47
Morrill	NB	*	25	0.16	13.50	0.83	265	30	60	221.5909	224	1	800	0.09505	-0.00019	0.000186	0.0950	0.12	13.55
Vine	NB	*	25	0.10	238.50	14.68	265	30	60	221.5909	242	2	1600	0.09544	-0.01443	0.014431	0.0954	0.19	13.54
Evans	NB	*	25	0.10	693.00	42.66	265	30	60	221.5909	292	2	1600	0.09628	-0.11968	0.119701	0.0963	0.22	13.54

PM PEAK - 2015
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	*	25	0.03	979.00	44.06	265	30	60	162	245	2	1600	0.09633	-0.12755	0.12757	0.0963	1.51	13.41
Sierra	SB	*	25	0.03	2510.00	106.68	265	30	60	153	365	3	2400	0.09716	-0.32659	0.326643	0.0972	1.96	13.42
Arlington	SB	*	30	0.10	1061.50	48.36	265	30	60	164	260	2	1600	0.09646	-0.15325	0.153275	0.0965	0.19	13.54
Keystone	SB	*	40	0.06	1545.50	65.25	265	30	60	152	328	2	1600	0.09698	-0.27802	0.278087	0.0970	0.49	13.51
Lake	SB	*	25	0.10	528.00	32.50	265	30	60	221.5909	271	2	1600	0.09597	-0.06993	0.069937	0.0960	0.21	13.54
West	SB	*	25	0.10	225.50	13.88	265	30	60	221.5909	263	1	800	0.09583	-0.05117	0.051184	0.0958	0.20	13.54
Ralston	SB	*	25	0.10	269.50	16.59	265	30	60	221.5909	273	1	800	0.09600	-0.07284	0.072858	0.0960	0.20	13.54
Washington	SB	*	30	0.10	132.00	8.13	265	30	60	221.5909	244	1	800	0.09548	-0.01766	0.017665	0.0955	0.19	13.54
Sutro	SB	*	40	0.11	819.50	50.44	265	30	60	221.5909	310	2	1600	0.09652	-0.16653	0.166557	0.0965	0.30	13.54
Morrill	SB	*	25	0.11	16.50	1.02	265	30	60	221.5909	224	1	800	0.09508	-0.00028	0.000278	0.0951	0.17	13.54
Vine	SB	*	25	0.11	291.50	17.94	265	30	60	221.5909	247	2	1600	0.09554	-0.02151	0.021513	0.0955	0.18	13.54
Evans	SB	*	25	0.10	847.00	52.14	265	30	60	221.5909	314	2	1600	0.09657	-0.1777	0.17773	0.0966	0.23	13.54

OFF PEAK - 2015
Northbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Center	NB	*	25	0.04	580.00	35.70	265	30	60	221.59	247	3	2400	0.09500	-0.03771	0.037713	0.0950	0.47	13.47
Virginia	NB	*	40	0.04	391.60	24.10	265	30	60	221.59	247	2	1600	0.09500	-0.03867	0.038675	0.0950	0.49	13.46
Arlington	NB	*	30	0.11	424.60	26.14	265	30	60	221.59	249	2	1600	0.09500	-0.04541	0.04541	0.0950	0.19	13.54
Keystone	NB	*	40	0.11	618.20	38.05	265	30	60	221.59	248	3	2400	0.09571	-0.0428	0.042802	0.0957	0.18	13.54
Lake	NB	*	25	0.10	211.20	13.00	265	30	60	221.59	235	2	1600	0.09572	-0.01133	0.011328	0.0957	0.16	13.54
West	NB	*	25	0.11	90.20	5.55	265	30	60	221.59	233	1	800	0.09658	-0.00827	0.008275	0.0966	0.18	13.54
Ralston	NB	*	25	0.11	107.00	6.64	265	30	60	221.59	235	1	800	0.09731	-0.0118	0.011804	0.0973	0.18	13.54
Washington	NB	*	30	0.11	52.80	3.25	265	30	60	221.59	226	1	800	0.09578	-0.00284	0.002844	0.0958	0.17	13.54
Sutro	NB	*	40	0.04	327.80	20.18	265	30	60	221.59	242	2	1600	0.09517	-0.02717	0.027167	0.0952	0.47	13.47
Morrill	NB	*	25	0.16	6.60	0.41	265	30	60	221.59	222	1	800	[illegible]	-4.5E-05	0.000045	0.0954	0.12	13.55
Vine	NB	*	25	0.10	116.60	7.18	265	30	60	221.59	229	2	1600	0.09510	-0.00347	0.003465	0.0951	0.18	13.54
Evans	NB	*	25	0.10	338.80	20.85	265	30	60	221.59	243	2	1600	0.09560	-0.02901	0.029008	0.0956	0.19	13.54

OFF PEAK - 2015
Southbound

Arterial	Direction	Arterial Class	Free Flow Speed (mph)	Length (miles)	Traffic Volume (vph)	Length of Queue (vehicles)	Running Time [T11-4]	Adjacent Intersection green (sec)	Adjacent Intersection cycle (sec)	Gate Down Time T(g)	Total Train Time T(o)	No. of Approach Lanes	Capacity	uniform delay	random delay	other delay	Intersection Approach Delay	Arterial Speed w/train	Arterial Speed w/o train
Virginia	SB	*	25	0.03	320.40	19.72	265	30	60	221.5909	242	2	1600	0.09559	-0.02598	0.025982	0.0956	0.68	13.41
Sierra	SB	*	25	0.03	1004.00	61.80	265	30	60	221.5909	269	3	2400	0.09824	-0.11175	0.111763	0.0982	0.69	13.42
Arlington	SB	*	30	0.10	347.40	21.38	265	30	60	221.5909	244	2	1600	0.09687	-0.24812	0.248174	0.0969	0.19	13.54
Keystone	SB	*	40	0.06	505.80	31.13	265	30	60	221.5909	255	2	1600	0.09564	-0.03049	0.03049	0.0956	0.32	13.51
Lake	SB	*	25	0.10	172.80	10.64	265	30	60	221.5909	232	2	1600	0.09593	-0.06423	0.064235	0.0959	0.19	13.54
West	SB	*	25	0.10	73.80	4.54	265	30	60	221.5909	231	1	800	0.09564	-0.03017	0.030179	0.0956	0.18	13.54
Ralston	SB	*	25	0.10	88.20	5.43	265	30	60	221.5909	232	1	800	0.09527	-0.00555	0.005547	0.0953	0.04	13.54
Washington	SB	*	30	0.10	43.20	2.66	265	30	60	221.5909	227	1	800	0.09532	-0.00791	0.007914	0.0953	0.19	13.54
Sutro	SB	*	40	0.11	268.20	16.51	265	30	60	221.5909	238	2	1600	0.09508	-0.00048	0.000477	0.0951	0.18	13.54
Morrill	SB	*	25	0.11	5.40	0.33	265	30	60	221.5909	222	1	800	0.09599	-0.07215	0.072164	0.0960	0.17	13.54
Vine	SB	*	25	0.11	95.40	5.87	265	30	60	221.5909	227	2	1600	0.09501	-7.5E-08	7.5E-08	0.0950	0.17	13.54
Evans	SB	*	25	0.10	277.20	17.06	265	30	60	221.5909	239	2	1600	0.09517	-0.00232	0.002322	0.0952	0.19	13.54

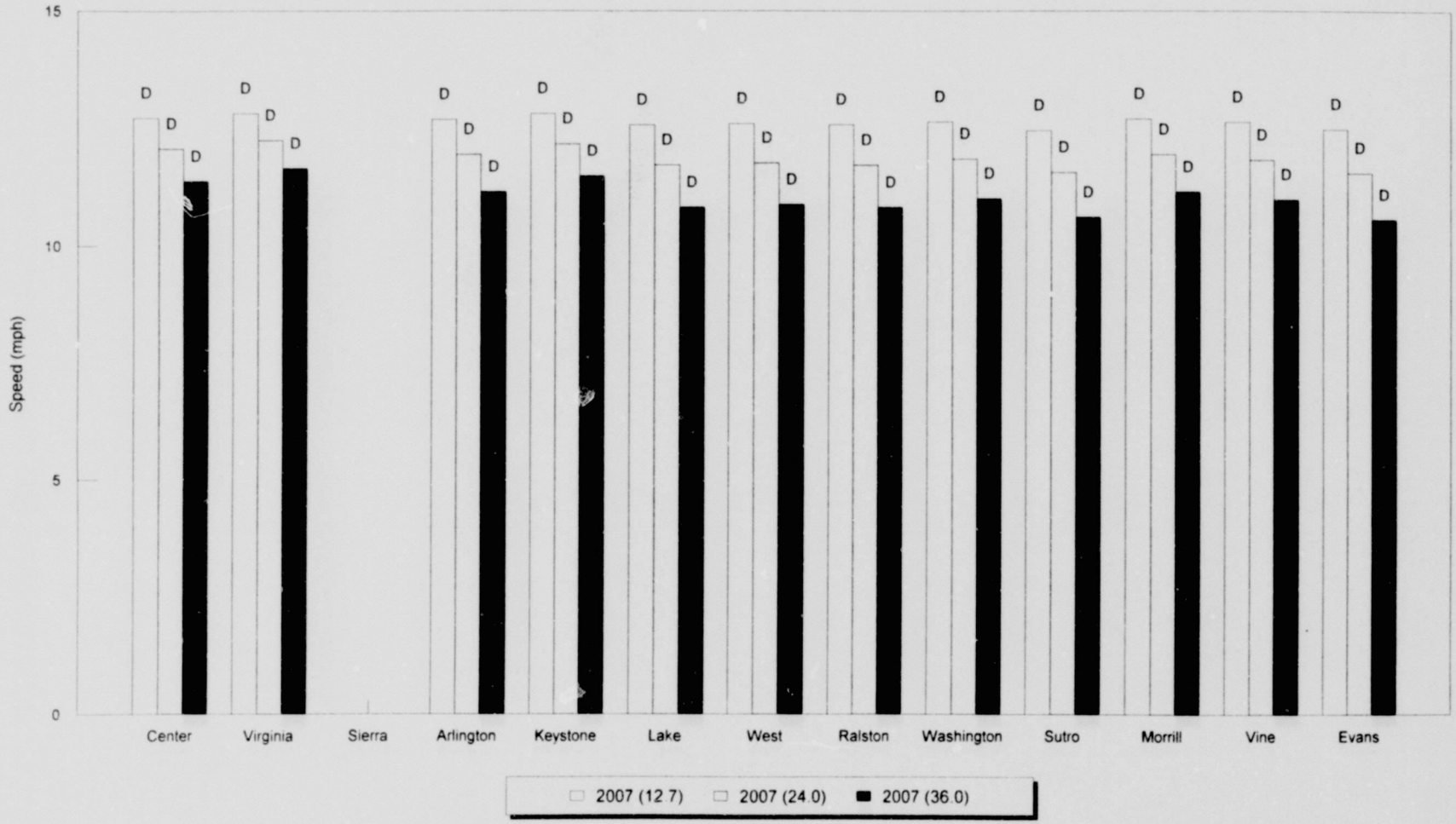
2015 Level of Service
without train

Arterial	Northbound am	Northbound pm	Northbound off	Southbound am	Southbound pm	Southbound off
Center	C	C	C			
Virginia	C	C	C	C	C	C
Sierra				C	C	C
Arlington	C	C	C	C	C	C
Keystone	C	C	C	C	C	C
Lake	C	C	C	C	C	C
West	C	C	C	C	C	C
Ralston	C	C	C	C	C	C
Washington	C	C	C	C	C	C
Sutro	C	C	C	C	C	C
Morrill	C	C	C	C	C	C
Vine	C	C	C	C	C	C
Evans	C	C	C	C	C	C

City of Reno

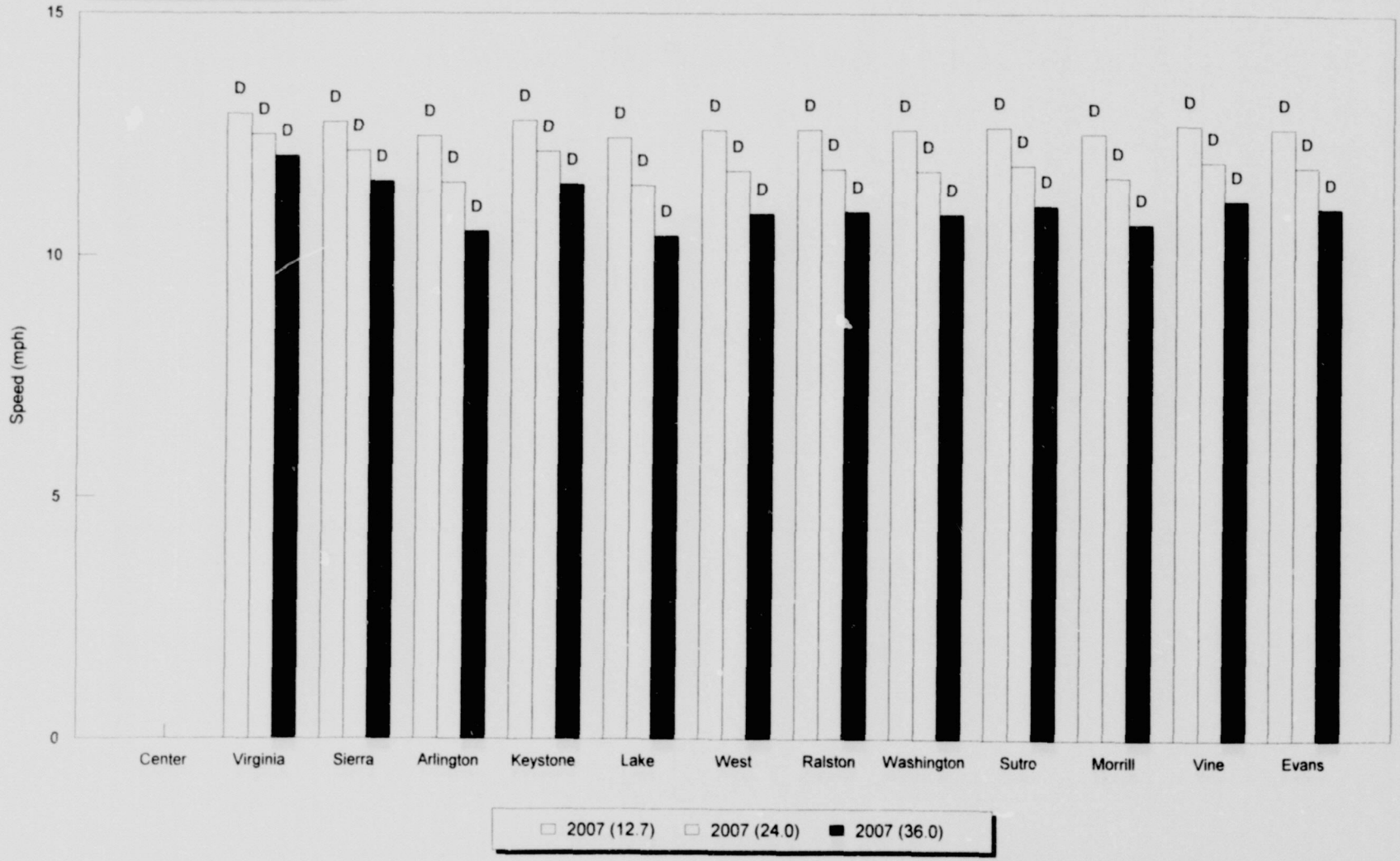
Railroad Crossing Study

2007 AM Peak - Northbound
Average Speed and Level of Service



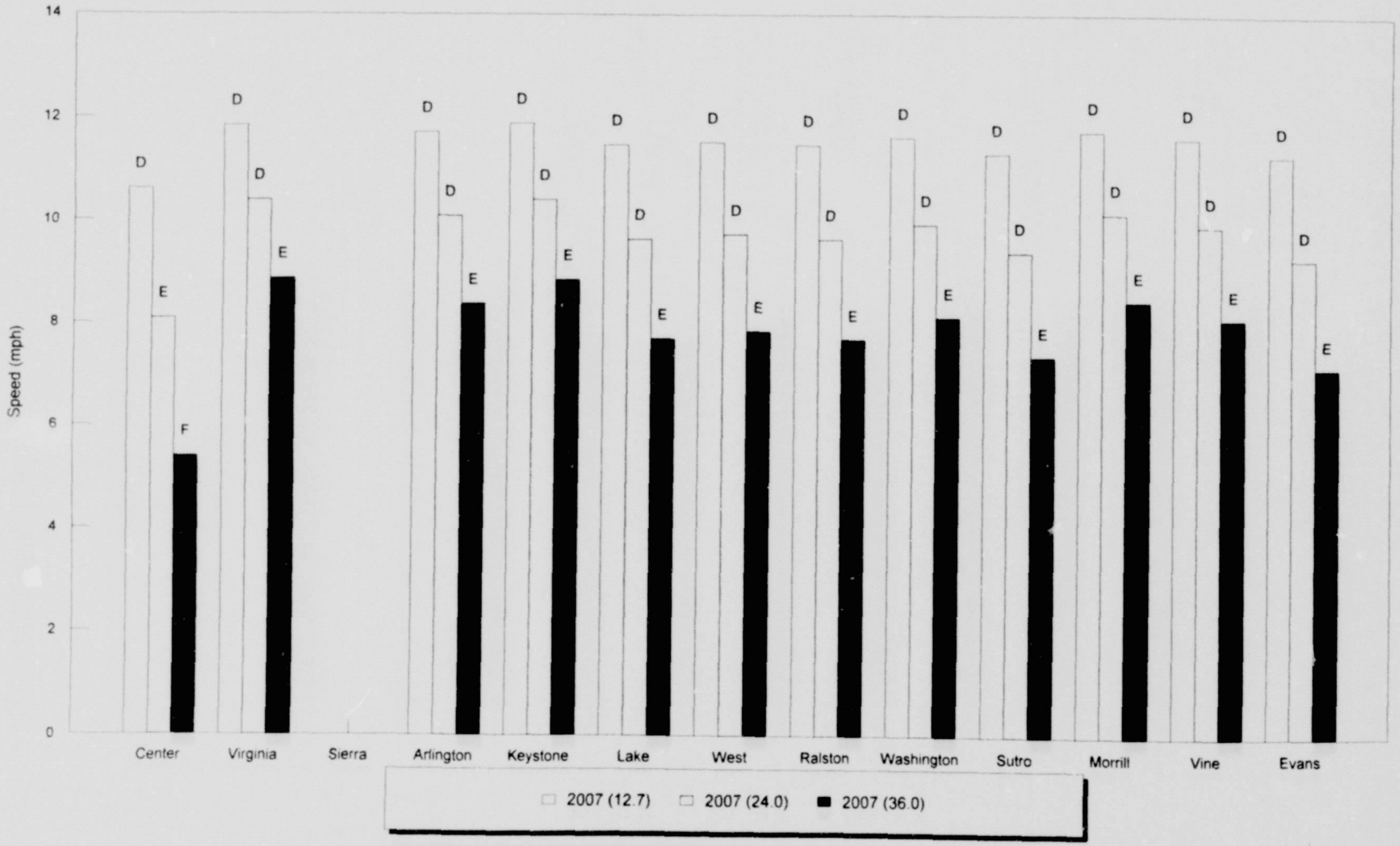
City of Reno
Railroad Crossing Study

2007 AM Peak - Southbound
Average Speed and Level of Service



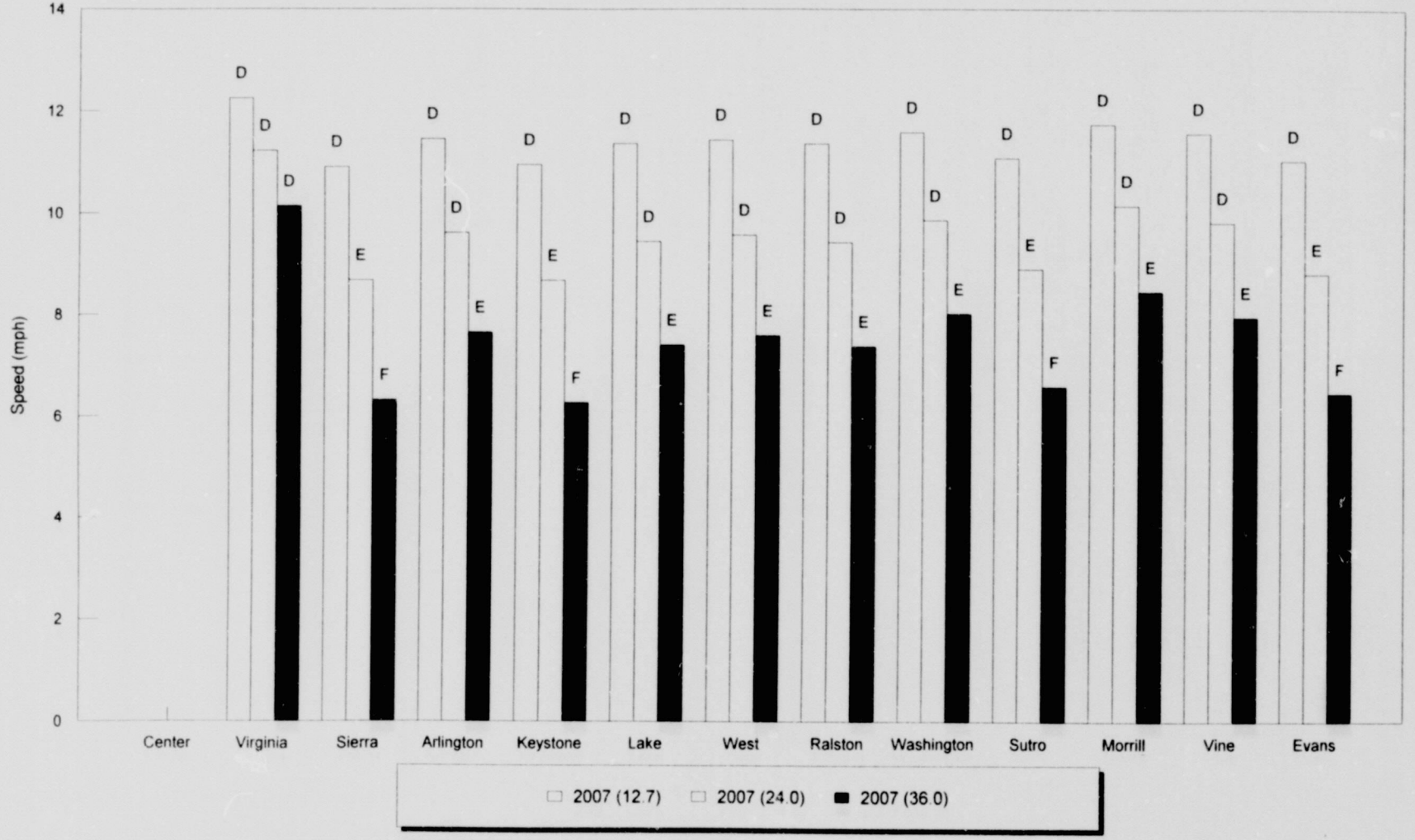
City of Reno
Railroad Crossing Study

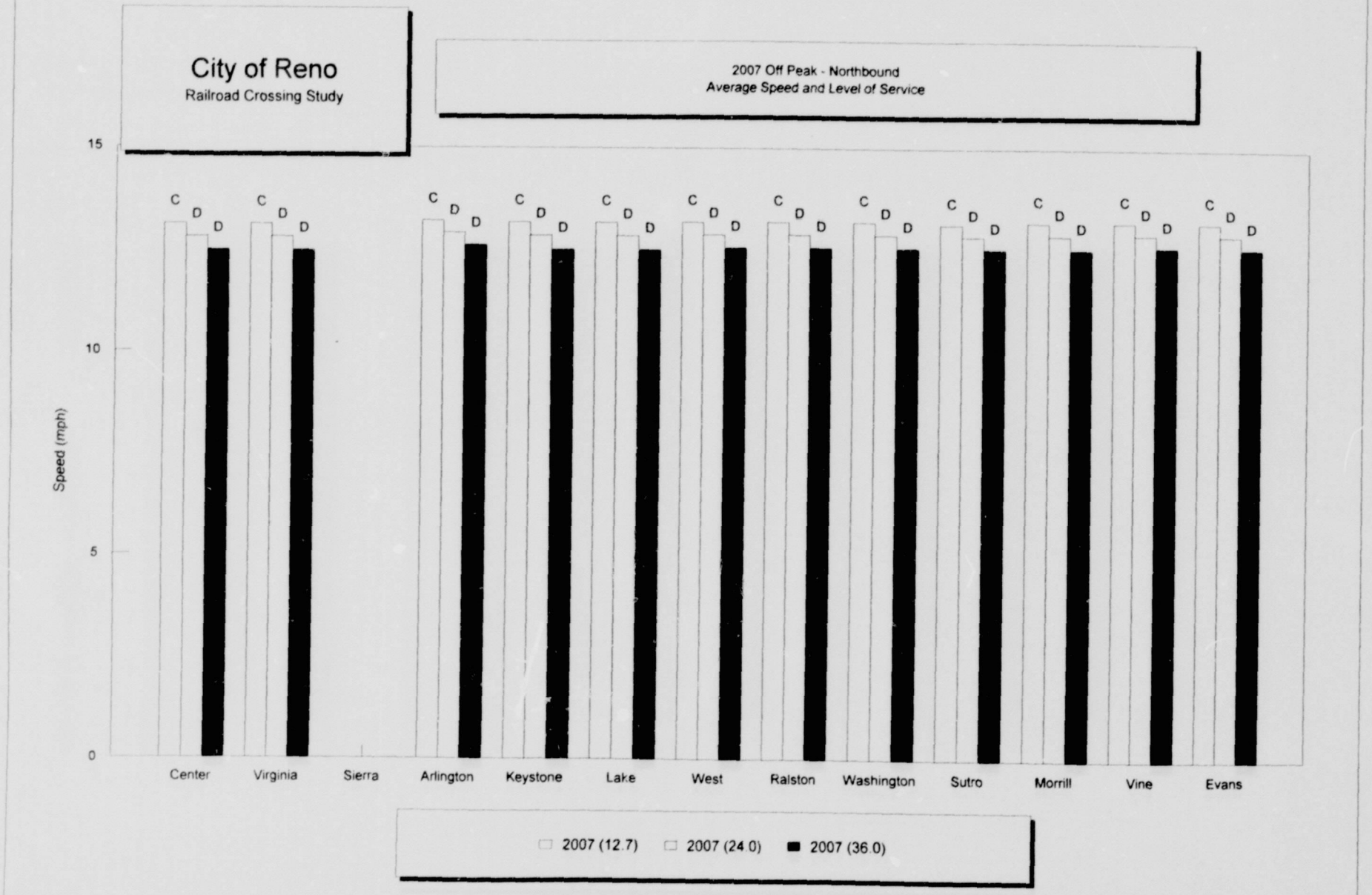
2007 PM Peak - Northbound
Average Speed and Level of Service



City of Reno
Railroad Crossing Study

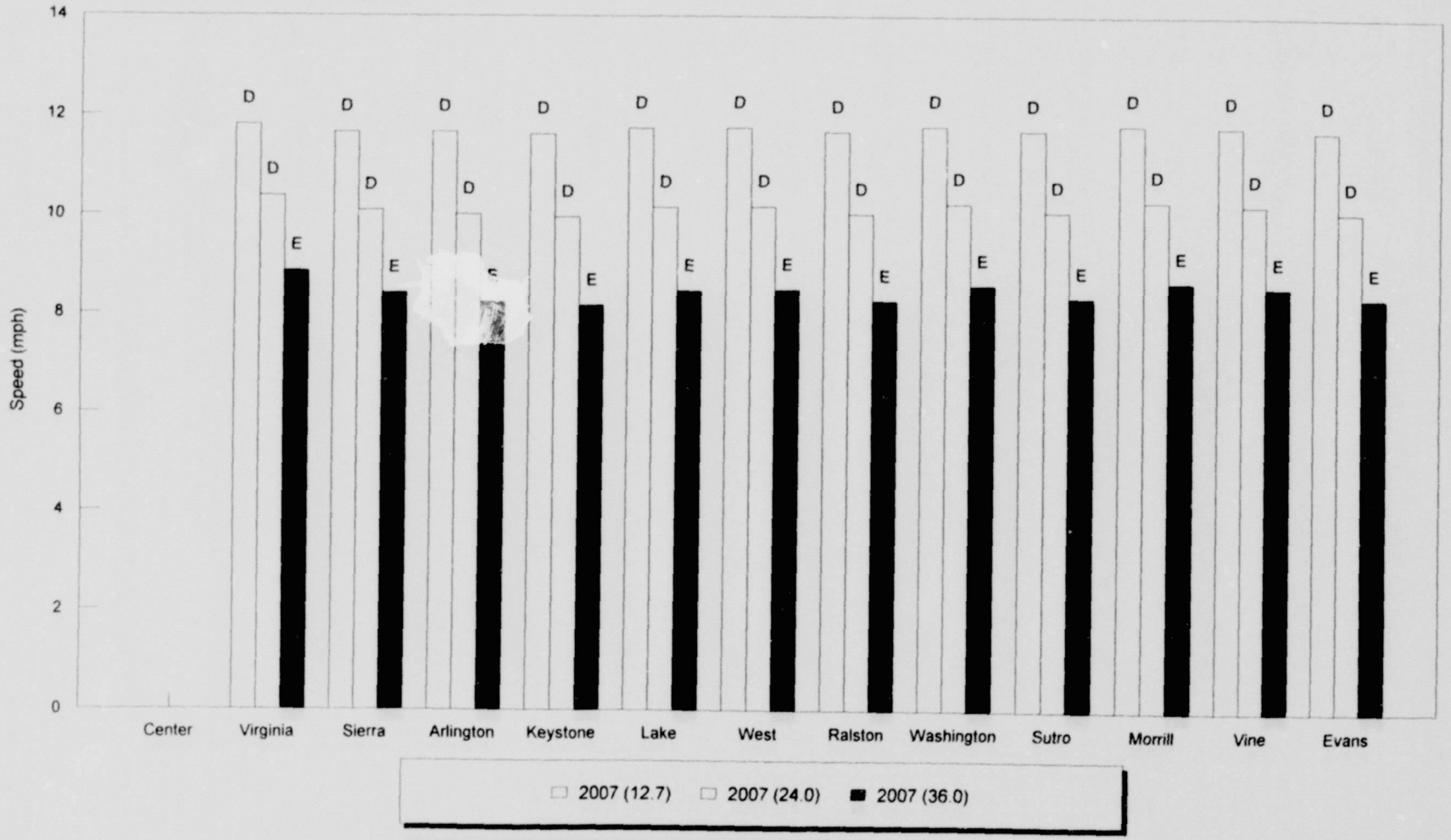
2007 PM Peak - Southbound
Average Speed and Level of Service




City of Reno
Railroad Crossing Study
2007 Off Peak - Northbound
Average Speed and Level of Service
Speed (mph)
15
10
5
0
C
D
D
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2007 (12.7)
2007 (24.0)
2007 (36.0)

City of Reno
Railroad Crossing Study

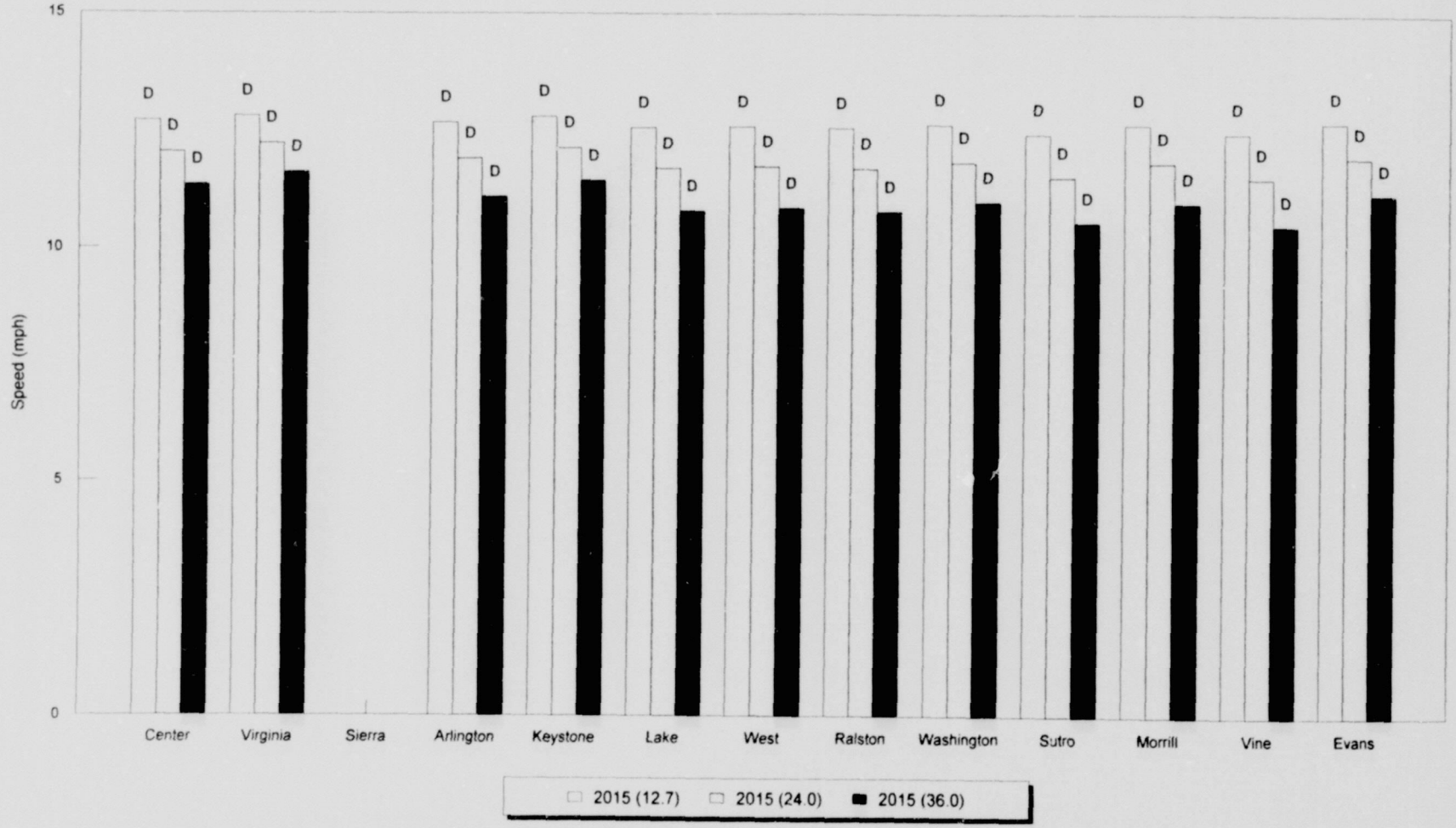
2007 Off Peak - Southbound
Average Speed and Level of Service

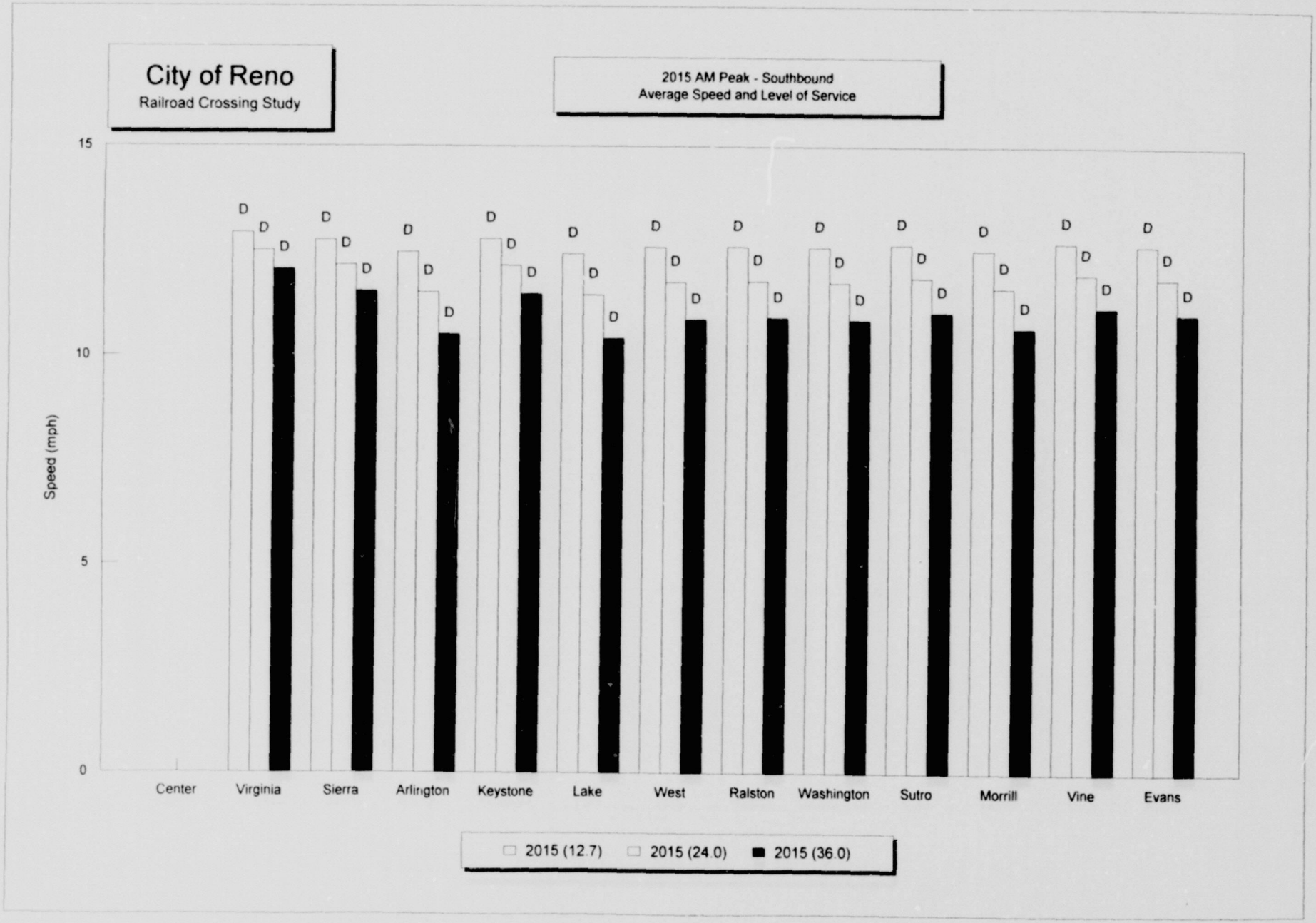


City of Reno

Railroad Crossing Study

2015 AM Peak - Northbound
Average Speed and Level of Service

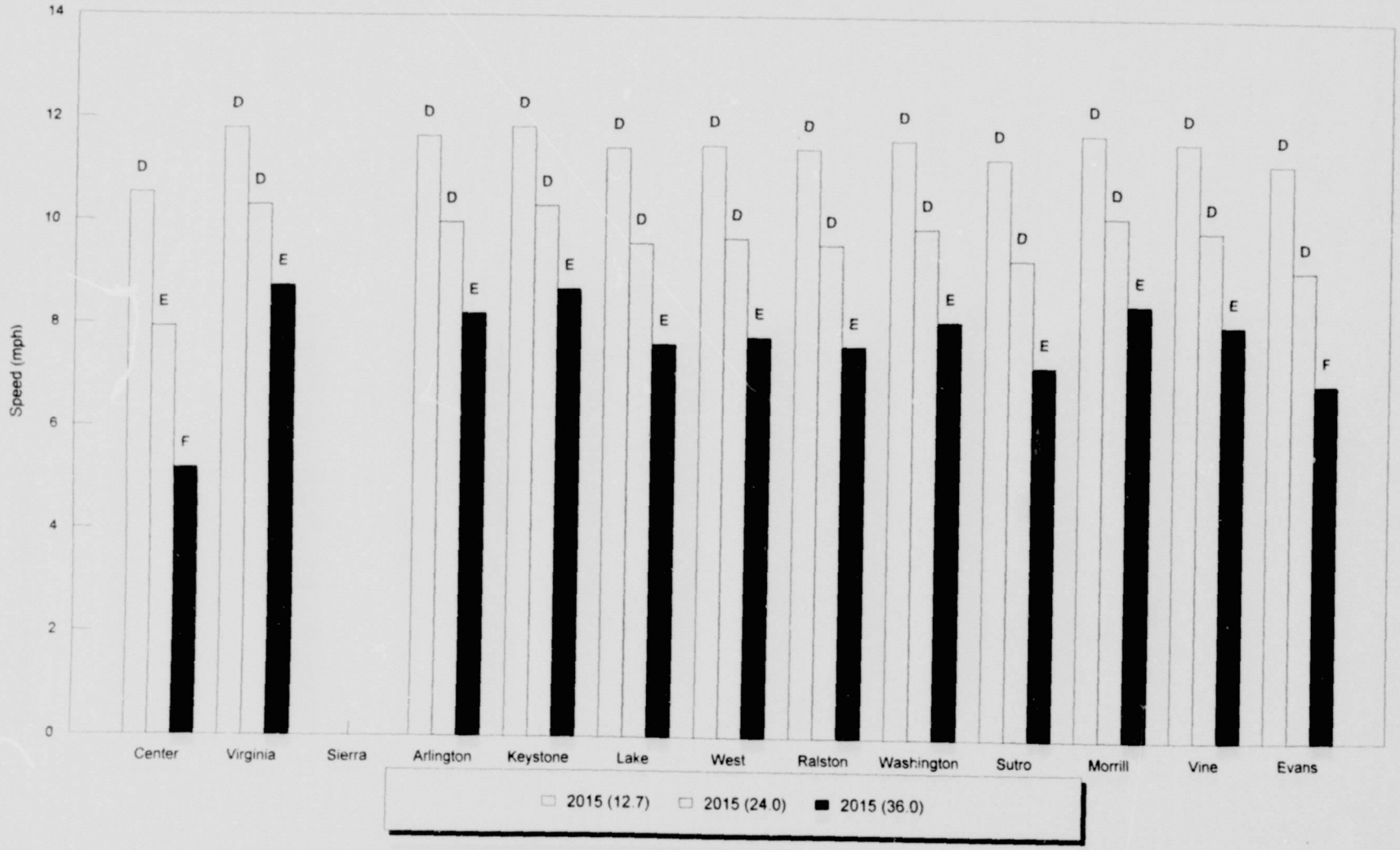



City of Reno
Railroad Crossing Study
2015 AM Peak - Southbound
Average Speed and Level of Service
Speed (mph)
15
10
5
0
D
Center
Virginia
Sierra
Arlington
Keystone
Lake
West
Ralston
Washington
Sutro
Morrill
Vine
Evans
2015 (12.7)
2015 (24.0)
2015 (36.0)

City of Reno

Railroad Crossing Study

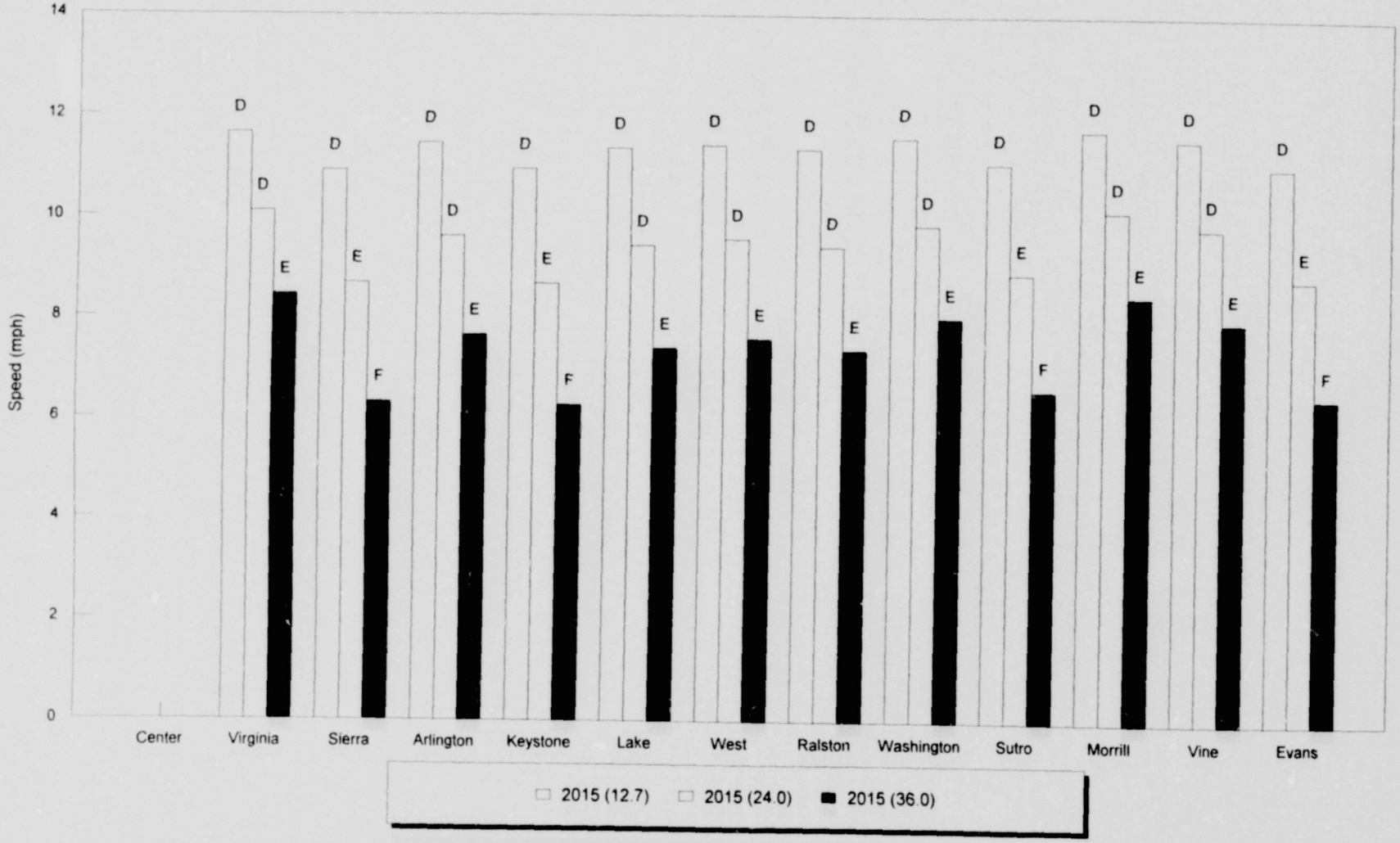
2015 PM Peak - Northbound
Average Speed and Level of Service



City of Reno

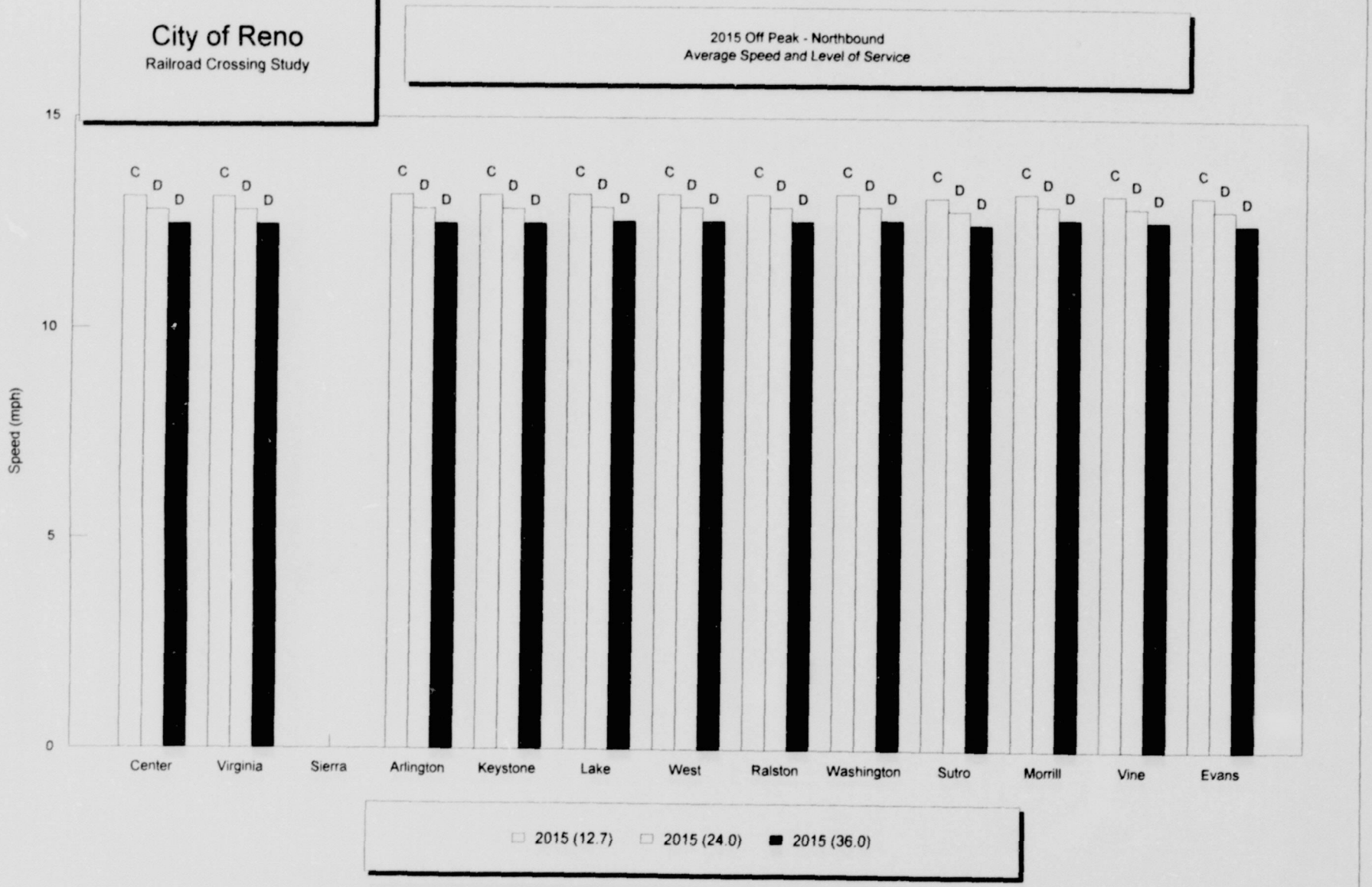
Railroad Crossing Study

2015 PM Peak - Southbound
Average Speed and Level of Service



City of Reno

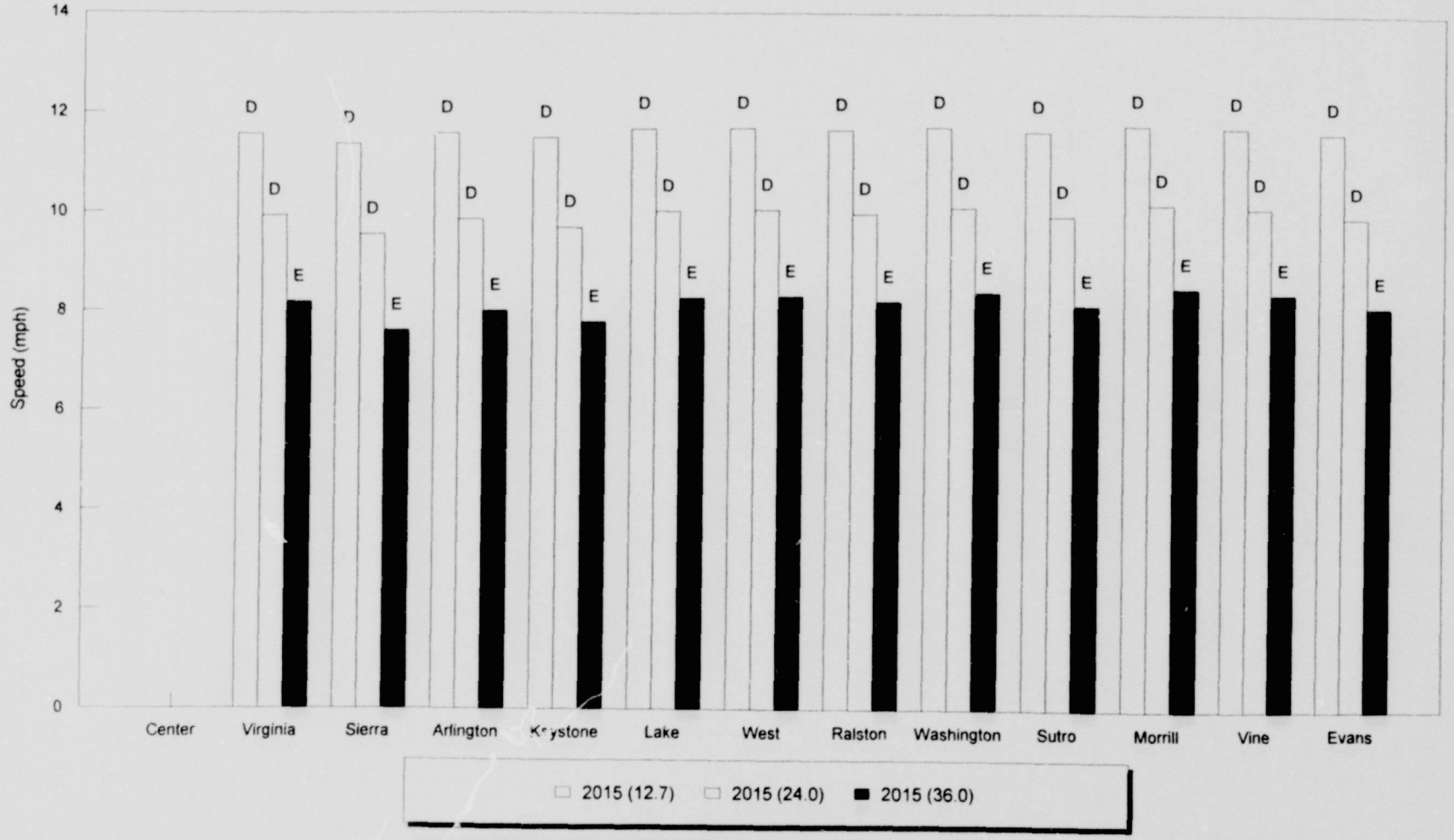
Railroad Crossing Study



City of Reno

Railroad Crossing Study

2015 Off Peak - Southbound
Average Speed and Level of Service



APPENDIX K
INTERSECTION ANALYSIS

- 1995
- 2000
- 2007
- 2015

Intersections Impacted
Northbound

	1995			2000		
	AM	PM	OFF	AM	PM	OFF
Center	yes	yes	no	yes	yes	no
Virginia	yes	yes	no	yes	yes	no
Sierra						
Arlington	no	no	no	no	no	no
Keystone	no	no	no	no	no	no
Lake	no	no	no	no	no	no
West	no	no	no	no	no	no
Ralston	no	no	no	no	no	no
Washington	no	no	no	no	no	no
Sutro	yes	yes	no	yes	yes	no
Morrill	no	no	no	no	no	no
Vine	no	no	no	no	no	no
Evans				no	no	no

Southbound

	1995			2000		
	AM	PM	OFF	AM	PM	OFF
Center						
Virginia	yes	yes	yes	yes	yes	yes
Sierra	yes	yes	yes	yes	yes	yes
Arlington	no	no	no	no	no	no
Keystone	yes	yes	no	yes	yes	no
Lake	no	no	no	no	no	no
West	no	no	no	no	no	no
Ralston	no	no	no	no	no	no
Washington	no	no	no	no	no	no
Sutro	no	no	no	no	no	no
Morrill	no	no	no	no	no	no
Vine	no	no	no	no	no	no
Evans				no	no	no

Number of Vehicles Overflow
Northbound

	1995			2000		
	AM	PM	OFF	AM	PM	OFF
Center	5	59		31	69	
Virginia	4	12		24	17	
Sierra						
Arlington						
Keystone						
Lake						
West						
Ralston						
Washington						
Sutro	9	17		47	23	
Morrill						
Vine						
Evans						

Southbound

	1995			2000		
	AM	PM	OFF	AM	PM	OFF
Center						
Virginia	4	32	1	24	48	3
Sierra	20	65	27	90	90	32
Arlington						
Keystone	3	30		28	53	
Lake						
West						
Ralston						
Washington						
Sutro						
Morrill						
Vine						
Evans						

1995-AM PEAK NORTHBOUND

	Time When Queue Begin	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycles Before Queue Dissipates	No. of Cycles To Clear Queue at Intersection	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center	120	152	32	2	5	1	1	8						8
Virginia	120	132	12	1	4	0	1	4						4
Sierra														
Arlington														
Keystone														
Lake														
West														
Ralston														
Washingto														
Sutro	180	222	42	2	9	1	2	9	9					18
Morrill														
Vine														
Evans														

1995-AM PEAK SOUTHBOUND

	Time When Queue Begin	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycles Before Queue Dissipates	No. of Cycles To Clear Queue at Intersection	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center														
Virginia	120	132	12	1	4	0	1	4						4
Sierra	60	152	92	5	20	2	2	30	25					55
Arlington														
Keystone	120	143	23	1	3	0	1	3						3
Lake														
West														
Ralston														
Washingto														
Sutro														
Morrill														
Vine														
Evans														

1995-PM PEAK NORTHBOUND

	Time When Queue Begi	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center	120	271	151	3	59	3	2	89	63	56	50	43	37			335
Virginia	180	162	-18	-0	12	-0	2	12	12	7						31
Sierra																
Arlington																
Keystone																
Lake																
West																
Ralston																
Washingto																
Sutro	180	222	42	1	17	1	2	17	17	13	8					55
Morrill																
Vine																
Evans																

1995-PM PEAK SOUTHBOUND

	Time When Queue Begi	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center																
Virginia	120	162	42	2	32	1	2	32	32	26	19	13				123
Sierra	60	153	93	5	65	2	2	98	71	60	49	38	27			342
Arlington																
Keystone	120	152	32	2	30	1	2	30								30
Lake																
West																
Ralston																
Washingto																
Sutro																
Morrill																
Vine																
Evans																

City of Reno Rail Delay Study
1995 - AM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	49	16	327	3	220	yes	5	60	30	1160	0.32	152	191
Virginia	28	14	282	2	210	yes	4	60	30	770	0.21	132	165
Sierra													
Arlington	38	19	383	2	560	no		60	30	836	0.23	165	211
Keystone	48	16	322	3	580	no		60	30	1216	0.34	143	182
Lake	26	13	256	2	550	no		60	30	417	0.12	222	249
West	11	11	217	1	560	no		60	30	176	0.05	222	244
Ralston	13	13	256	1	570	no		60	30	208	0.06	222	249
Washingto	6	6	127	1	580	no		60	30	103	0.03	222	234
Sutro	40	20	396	2	220	yes	9	60	30	644	0.18	222	267
Morrill	1	1	20	1	820	no		60	30	17	0.00	222	224
Vine	14	7	142	2	540	no		60	30	230	0.06	222	236
Evans													

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	19	60	19	overflow					
Virginia	13	60	13	overflow					
Sierra									
Arlington	14	60	14	28	42	queue dissipa			
Keystone	20	60	20	41	61	queue dissipa			
Lake	7	60	7	14	21	28	queue dissipa		
West	3	60	3	6	9	12	queue dissipa		
Ralston	3	60	3	7	10	14	queue dissipa		
Washingto	2	60	2	3	5	queue dissipa			
Sutro	11	60	11	21	overflow				
Morrill	0	60	0	1	1	queue dissipa			
Vine	4	60	4	8	12	queue dissipa			
Evans									

City of Reno Rail Delay Study
1995 - AM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	23	12	231	2	150	yes	4	60	30	630	0.18	132	158
Sierra	83	28	555	3	160	yes	20	60	30	1970	0.55	152	232
Arlington	31	16	314	2	540	no		60	30	684	0.19	165	201
Keystone	40	20	395	2	330	yes	3	60	30	995	0.28	143	193
Lake	21	10	210	2	530	no		60	30	341	0.09	222	243
West	9	9	177	1	550	no		60	30	144	0.04	222	240
Ralston	10	10	210	1	540	no		60	30	170	0.05	222	243
Washingto	5	5	104	1	530	no		60	30	84	0.02	222	232
Sutro	32	16	324	2	560	no		60	30	527	0.15	222	257
Morrill	1	1	17	1	560	no		60	30	14	0.00	222	223
Vine	12	6	116	2	577	no		60	30	188	0.05	222	233
Evans													

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	11	60	11	overflow					
Sierra	33	60	overflow						
Arlington	11	60	11	23	34	queue diss			
Keystone	17	60	17	overflow					
Lake	6	60	6	11	17	23	queue diss		
West	2	60	2	5	7	10	queue diss		
Ralston	3	60	3	6	9	11	queue diss		
Washingto	1	60	1	3	4	queue diss			
Sutro	9	60	9	18	26	35	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	3	60	3	6	9	queue diss			
Evans									

City of Reno Rail Delay Study
1995 - PM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	87	29	582	3	220	yes	59	60	30	1160	0.32	271	370
Virginia	28	14	284	2	210	yes	12	60	30	630	0.18	162	207
Sierra													
Arlington	31	16	312	2	560	no		60	30	684	0.19	164	215
Keystone	42	14	280	3	580	no		60	30	995	0.28	152	197
Lake	21	10	210	2	550	no		60	30	341	0.09	222	251
West	9	9	177	1	560	no		60	30	144	0.04	222	246
Ralston	10	10	210	1	570	no		60	30	170	0.05	222	251
Washingto	5	5	104	1	580	no		60	30	84	0.02	222	235
Sutro	32	16	324	2	220	yes	17	60	30	527	0.15	222	271
Morrill	1	1	17	1	820	no		60	30	14	0.00	222	224
Vine	12	6	116	2	540	no		60	30	188	0.05	222	237
Evans													

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	19	60	19	overflow					
Virginia	11	60	11	21	overflow				
Sierra									
Arlington	11	60	11	23	34	queue diss			
Keystone	17	60	17	33	50	queue diss			
Lake	6	60	6	11	17	23	queue diss		
West	2	60	2	5	7	10	queue diss		
Ralston	3	60	3	6	9	11	queue diss		
Washingto	1	60	1	3	4	queue diss			
Sutro	9	60	9	18	overflow				
Morrill	0	60	0	0	1	queue diss			
Vine	3	60	3	6	9	queue diss			
Evans									

City of Reno Rail Delay Study
1995 - PM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	35	17	347	2	150	yes	32	60	30	770	0.21	162	221
Sierra	84	28	558	3	160	yes	65	60	30	1970	0.55	153	281
Arlington	38	19	381	2	540	no		60	30	836	0.23	164	231
Keystone	51	26	513	2	330	yes	30	60	30	1216	0.34	152	263
Lake	26	13	256	2	530	no		60	30	417	0.12	222	259
West	11	11	217	1	550	no		60	30	176	0.05	222	252
Ralston	13	13	256	1	540	no		60	30	208	0.06	222	259
Washingto	6	6	127	1	530	no		60	30	103	0.03	222	239
Sutro	40	20	396	2	560	no		60	30	644	0.18	222	285
Morrill	1	1	20	1	560	no		60	30	17	0.00	222	224
Vine	14	7	142	2	577	no		60	30	230	0.06	222	241
Evans													

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue								
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7		
Center											
Virginia	13	60	11	overflow							
Sierra	33	60	overflow								
Arlington	14	60	11	23	34	queue diss					
Keystone	20	60	17	overflow							
Lake	7	60	6	11	17	23	queue diss				
West	3	60	2	5	7	10	queue diss				
Ralston	3	60	3	6	9	11	queue diss				
Washingto	2	60	1	3	4	queue diss					
Sutro	11	60	9	18	26	35	queue diss				
Morrill	0	60	0	0	1	queue diss					
Vine	4	60	3	6	9	queue diss					
Evans											

2000-AM PEAK NORTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center	120	152	32	2	23	1	2	34	27	19	12			93
Virginia	120	132	12	1	16	0	2	16	16	9				42
Sierra														
Arlington														
Keystone														
Lake														
West														
Ralston														
Washingto														
Sutro	120	222	102	5	36	2	2	36	36	30	24	18	12	154
Morrill														
Vine														
Evans														

2000-AM PEAK SOUTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center														
Virginia	120	132	12	1	17	0	2	17	17	11				45
Sierra	60	152	92	5	74	2	2	111	80	68	56	44	32	390
Arlington														
Keystone	120	143	23	1	17	0	2	17	17					34
Lake														
West														
Ralston														
Washingto														
Sutro														
Morrill														
Vine														
Evans														

2000-PM PEAK NORTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center	120	271	151	3	69	3	2	104	73	66	59	51	44	397
Virginia	120	162	42	1	17	1	2	17	17	10				43
Sierra														
Arlington	240	164	-76	-1		-1	1	0						
Keystone														
Lake														
West														
Ralston														
Washingto														
Sutro	120	222	102	2	23	2	2	23	23	17	11			72
Morrill														
Vine														
Evans														

2000-PM PEAK SOUTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center																
Virginia	120	162	42	2	38	1	2	38	38	31	24	17	10			157
Sierra	60	153	93	5	75	2	2	112	81	69	56	44	32	20		394
Arlington																
Keystone	120	152	32	2	38	1	2	38	38	27	16					120
Lake																
West																
Ralston																
Washingto																
Sutro																
Morrill																
Vine																
Evans																

City of Reno Rail Delay Study
2000 - AM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	54	18	360	3	220	yes	23	60	30	1280	0.36	152	196
Virginia	31	16	311	2	210	yes	16	60	30	847	0.24	132	170
Sierra													
Arlington	42	21	421	2	560	no		60	30	919	0.26	165	217
Keystone	53	18	354	3	580	no		60	30	1337	0.37	143	187
Lake	28	14	281	2	550	no		60	30	457	0.13	222	252
West	12	12	237	1	560	no		60	30	193	0.05	222	246
Ralston	14	14	284	1	570	no		60	30	231	0.06	222	252
Washingto	7	7	142	1	580	no		60	30	116	0.03	222	236
Sutro	44	22	437	2	220	yes	36	60	30	710	0.20	222	272
Morrill	1	1	20	1	820	no		60	30	17	0.00	222	224
Vine	16	8	156	2	540	no		60	30	253	0.07	222	237
Evans	45	23	454	2	550	no		60	30	736	0.20	222	275

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	21	60	21	overflow					
Virginia	14	60	14	overflow					
Sierra									
Arlington	15	60	15	31	46	overflow			
Keystone	22	60	22	45	67	overflow			
Lake	8	60	8	15	23	30	queue diss		
West	3	60	3	6	10	13	queue diss		
Ralston	4	60	4	8	12	15	queue diss		
Washingto	2	60	2	4	6	queue diss			
Sutro	12	60	12	overflow					
Morrill	0	60	0	1	1	queue diss			
Vine	4	60	4	8	13	queue diss			
Evans	12	60	12	25	37	49	overflow		

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City of Reno Rail Delay Study
2000 - AM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	25	13	254	2	150	yes	17	60	30	893	0.19	132	161
Sierra	92	31	611	3	160	yes	74	60	30	2170	0.60	152	245
Arlington	34	17	344	2	540	no		60	30	752	0.21	165	205
Keystone	43	22	434	2	330	yes	17	60	30	1094	0.30	143	200
Lake	23	11	230	2	530	no		60	30	374	0.10	222	246
West	10	10	194	1	550	no		60	30	158	0.04	222	242
Ralston	12	12	233	1	540	no		60	30	189	0.05	222	246
Washingto	6	6	116	1	530	no		60	30	95	0.03	222	233
Sutro	36	18	357	2	560	no		60	30	581	0.16	222	261
Morrill	1	1	17	1	560	no		60	30	14	0.00	222	223
Vine	13	6	127	2	577	no		60	30	207	0.06	222	234
Evans	37	19	371	2	530	no		60	30	602	0.17	222	264

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	12	60	12	overflow					
Sierra	36	60	overflow						
Arlington	13	60	13	25	38	queue diss			
Keystone	18	60	18	overflow					
Lake	6	60	6	12	19	25	queue diss		
West	3	60	3	5	8	11	queue diss		
Ralston	3	60	3	6	9	13	queue diss		
Washingto	2	60	2	3	5	queue diss			
Sutro	10	60	10	19	29	39	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	3	60	3	7	10	queue diss			
Evans	10	60	10	20	30	40	queue diss		

City of Reno Rail Delay Study
2000 - PM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	96	32	642	3	220	yes	69	60	30	1280	0.36	271	385
Virginia	31	16	312	2	210	yes	17	60	30	693	0.24	162	213
Sierra													
Arlington	34	17	342	2	560	no		60	30	752	0.26	164	222
Keystone	46	15	308	3	580	no		60	30	1094	0.37	152	204
Lake	23	11	230	2	550	no		60	30	374	0.13	222	255
West	10	10	194	1	560	no		60	30	158	0.05	222	249
Ralston	12	12	233	1	570	no		60	30	189	0.06	222	255
Washingto	6	6	116	1	580	no		60	30	95	0.03	222	237
Sutro	36	18	357	2	220	yes	23	60	30	581	0.20	222	278
Morrill	1	1	17	1	820	no		60	30	14	0.00	222	224
Vine	13	6	127	2	540	no		60	30	207	0.07	222	239
Evans	37	19	371	2	550	no		60	30	602	0.20	222	280

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	21	60	21	overflow					
Virginia	14	60	14	overflow					
Sierra									
Arlington	15	60	15	31	46	overflow			
Keystone	22	60	22	45	67	overflow			
Lake	8	60	8	15	23	30	queue diss		
West	3	60	3	6	10	13	queue diss		
Ralston	4	60	4	8	12	15	queue diss		
Washingto	2	60	2	4	6	queue diss			
Sutro	12	60	12	overflow					
Morrill	0	60	0	1	1	queue diss			
Vine	4	60	4	8	13	queue diss			
Evans	12	60	12	25	37	49	overflow		

City of Reno Rail Delay Study
2000 - PM peak2 Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	38	19	381	2	150	yes	38	60	30	847	0.24	162	229
Sierra	92	31	615	3	160	yes	75	60	30	2170	0.60	153	307
Arlington	42	21	418	2	540	no		60	30	919	0.26	164	241
Keystone	56	28	564	2	330	yes	38	60	30	1337	0.37	152	284
Lake	28	14	281	2	530	no		60	30	457	0.13	222	263
West	12	12	237	1	550	no		60	30	193	0.05	222	256
Ralston	14	14	284	1	540	no		60	30	231	0.06	222	264
Washingto	7	7	142	1	530	no		60	30	116	0.03	222	241
Sutro	44	22	437	2	560	no		60	30	710	0.20	222	294
Morrill	1	1	20	1	560	no		60	30	17	0.00	222	224
Vine	16	8	156	2	577	no		60	30	253	0.07	222	243
Evans	45	23	453	2	530	no		60	30	736	0.20	222	298

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	14	60	12	overflow					
Sierra	36	60	overflow						
Arlington	15	60	13	25	38	queue diss			
Keystone	22	60	18	overflow					
Lake	8	60	6	12	19	25	queue diss		
West	3	60	3	5	8	11	queue diss		
Ralston	4	60	3	6	9	13	queue diss		
Washingto	2	60	2	3	5	queue diss			
Sutro	12	60	10	19	29	39	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	4	60	3	7	10	queue diss			
Evans	12	60	10	20	30	40	queue diss		

Intersections Impacted
Northbound

	2007			2015		
	AM	PM	OFF	AM	PM	OFF
Center	yes	yes	yes	yes	yes	yes
Virginia	yes	yes	yes	yes	yes	yes
Sierra						
Arlington	no	no	no	no	no	no
Keystone	no	no	no	no	no	no
Lake	no	no	no	no	no	no
West	no	no	no	no	no	no
Ralston	no	no	no	no	no	no
Washington	no	no	no	no	no	no
Sutro	yes	yes	no	yes	yes	no
Morrill	no	no	no	no	no	no
Vine	no	no	no	no	no	no
Evans	no	no	no	no	no	no

Southbound

	2007			2015		
	AM	PM	OFF	AM	PM	OFF
Center						
Virginia	yes	yes	yes	yes	yes	yes
Sierra	yes	yes	yes	yes	yes	yes
Arlington	no	no	no	no	no	no
Keystone	yes	yes	no	yes	yes	no
Lake	no	no	no	no	no	no
West	no	no	no	no	no	no
Ralston	no	no	no	no	no	no
Washington	no	no	no	no	no	no
Sutro	no	no	no	no	no	no
Morrill	no	no	no	no	no	no
Vine	no	no	no	no	no	no
Evans	no	no	no	no	no	no

Number of Vehicles Overflow
Northbound

	2007			2015		
	AM	PM	OFF	AM	PM	OFF
Center	8	77	1	31	83	3
Virginia	6	20	2	24	25	5
Sierra						
Arlington						
Keystone						
Lake						
West						
Ralston						
Washington						
Sutro	12	27		47	32	
Morrill						
Vine						
Evans						

Southbound

	2007			2015		
	AM	PM	OFF	AM	PM	OFF
Center						
Virginia	6	42	5	24	48	8
Sierra	25	82	36	90	90	41
Arlington						
Keystone	7	45		28	53	
Lake						
West						
Ralston						
Washington						
Sutro						
Morrill						
Vine						
Evans						

2007-AM PEAK NORTHBOUND

	Time When Queue Begin	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycles Before Queue Dissipates	No. of Cycles To Clear Queue at Intersection	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center	120	152	32	2	8	1	1	12						12
Virginia	120	132	12	1	6	0	1	6						6
Sierra														
Arlington	240	165	-75	-4		-1	1	0						
Keystone														
Lake														
West														
Ralston														
Washingto														
Sutro	120	222	102	5	12	2	2	12	12					25
Morrill														
Vine														
Evans														

2015-AM PEAK SOUTHBOUND

	Time When Queue Begin	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycles Before Queue Dissipates	No. of Cycles To Clear Queue at Intersection	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center														
Virginia	120	132	12	1	6	0	1	6						6
Sierra	60	152	92	5	25	2	2	37	31					68
Arlington														
Keystone	120	143	23	1	7	0	1	7						7
Lake														
West														
Ralston														
Washingto														
Sutro														
Morrill														
Vine														
Evans														

2007-PM PEAK NORTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center	120	271	151	3	77	3	2	115	80	73	65	58	50			441
Virginia	120	162	42	1	20	1	2	20	20	13						53
Sierra																
Arlington	240	164	-76	-1		-1	1	0								
Keystone																
Lake																
West																
Ralston																
Washingto																
Sutro	120	222	102	2	27	2	2	27	27	20	14	8				95
Morrill																
Vine																
Evans																

2015-PM PEAK SOUTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center																
Virginia	120	162	42	2	42	1	2	42	42	35	27	20	12			179
Sierra	60	153	93	5	82	2	2	122	88	75	62	49	36	24		433
Arlington																
Keystone	120	152	32	2	[illegible]	1	2	45	45	33	21					144
Lake																
West																
Ralston																
Washingto																
Sutro																
Morrill																
Vine																
Evans																

City of Reno Rail Delay Study
2007 - AM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	58	19	386	3	220	yes	8	60	30	1370	0.38	152	200
Virginia	33	17	333	2	210	yes	6	60	30	908	0.25	132	173
Sierra													
Arlington	45	23	451	2	560	no		60	30	985	0.27	165	222
Keystone	57	19	379	3	580	no		60	30	1430	0.40	143	191
Lake	30	15	301	2	550	no		60	30	490	0.14	222	254
West	13	13	254	1	560	no		60	30	206	0.06	222	248
Ralston	15	15	305	1	570	no		60	30	248	0.07	222	255
Washingto	8	8	152	1	580	no		60	30	124	0.03	222	237
Sutro	47	23	467	2	220	yes	12	60	30	759	0.21	222	277
Morrill	1	1	20	1	820	no		60	30	17	0.00	222	224
Vine	17	8	166	2	540	no		60	30	270	0.07	222	238
Evans	48	24	485	2	550	no		60	30	788	0.22	222	279

	Vehicles Through Int. Per Cycle (veh)	Length of Cycle (sec)	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	23	60	23	overflow					
Virginia	15	60	15	overflow					
Sierra									
Arlington	16	60	16	33	49	overflow			
Keystone	24	60	24	48	72	overflow			
Lake	8	60	8	16	24	33	queue dissipa		
West	3	60	3	7	10	14	queue dissipa		
Ralston	4	60	4	8	12	17	queue dissipa		
Washingto	2	60	2	4	6	queue dissipa			
Sutro	13	60	13	overflow					
Morrill	0	60	0	1	1	queue dissipa			
Vine	4	60	4	9	13	queue dissipa			
Evans	13	60	13	26	39	53	overflow		

City of Reno Rail Delay Study
2007 - AM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj. Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	27	14	272	2	150	yes	6	60	30	743	0.21	132	132
Sierra	98	33	653	3	160	yes	25	60	30	2320	0.64	152	184
Arlington	37	18	369	2	540	no		60	30	806	0.22	165	269
Keystone	46	23	465	2	330	yes	7	60	30	1170	0.33	143	187
Lake	25	12	247	2	530	no		60	30	401	0.11	222	285
West	10	10	208	1	550	no		60	30	169	0.05	222	248
Ralston	12	12	249	1	540	no		60	30	203	0.06	222	243
Washingto	6	6	125	1	530	no		60	30	101	0.03	222	248
Sutro	38	19	382	2	560	no		60	30	621	0.17	222	234
Morrill	1	1	17	1	560	no		60	30	14	0.00	222	265
Vine	14	7	136	2	577	no		60	30	221	0.06	222	223
Evans	40	20	397	2	530	no		60	30	644	0.18	222	235

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	12	60	12	overflow					
Sierra	39	60	overflow						
Arlington	13	60	13	27	40	queue diss			
Keystone	20	60	20	overflow					
Lake	7	60	7	13	20	27	queue diss		
West	3	60	3	6	8	11	queue diss		
Ralston	3	60	3	7	10	14	queue diss		
Washingto	2	60	2	3	5	queue diss			
Sutro	10	60	10	21	31	41	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	4	60	4	7	11	queue diss			
Evans	11	60	11	21	32	43	overflow		

City of Reno Rail Delay Study
2007 - PM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int. (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	103	34	688	3	220	yes	77	60	30	1370	0.38	271	397
Virginia	33	17	334	2	210	yes	20	60	30	743	0.25	162	218
Sierra													
Arlington	37	18	367	2	560	no		60	30	806	0.27	164	228
Keystone	49	16	329	3	580	no		60	30	1170	0.40	152	208
Lake	25	12	247	2	550	no		60	30	401	0.14	222	257
West	10	10	208	1	560	no		60	30	169	0.06	222	251
Ralston	12	12	249	1	570	no		60	30	203	0.07	222	258
Washingto	6	6	125	1	580	no		60	30	101	0.03	222	238
Sutro	38	19	382	2	220	yes	27	60	30	621	0.21	222	283
Morrill	1	1	17	1	820	no		60	30	14	0.00	222	224
Vine	14	7	136	2	540	no		60	30	221	0.07	222	240
Evans	38	19	382	2	550	no		60	30	621	0.22	222	283

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	23	60	23	overflow					
Virginia	15	60	15	overflow					
Sierra									
Arlington	16	60	16	33	49	overflow			
Keystone	24	60	24	48	72	overflow			
Lake	8	60	8	16	24	33	queue diss		
West	3	60	3	7	10	14	queue diss		
Ralston	4	60	4	8	12	17	queue diss		
Washingto	2	60	2	4	6	queue diss			
Sutro	13	60	13	overflow					
Morrill	0	60	0	1	1	queue diss			
Vine	4	60	4	9	13	queue diss			
Evans	13	60	13	26	39	53	overflow		

City of Reno Rail Delay Study
2007 - PM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	41	20	408	2	150	yes	42	60	30	908	0.25	162	162
Sierra	99	33	657	3	160	yes	82	60	30	2320	0.64	153	228
Arlington	45	22	448	2	540	no		60	30	985	0.27	164	341
Keystone	60	30	604	2	330	yes	45	60	30	1430	0.40	152	237
Lake	30	15	301	2	530	no		60	30	490	0.14	222	371
West	13	13	254	1	550	no		60	30	206	0.06	222	267
Ralston	15	15	305	1	540	no		60	30	248	0.07	222	259
Washingto	8	8	152	1	530	no		60	30	124	0.03	222	268
Sutro	47	23	467	2	560	no		60	30	759	0.21	222	242
Morrill	1	1	20	1	560	no		60	30	17	0.00	222	301
Vine	17	8	166	2	577	no		60	30	270	0.07	222	224
Evans	47	23	467	2	530	no		60	30	759	0.21	222	244

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	15	60	12	overflow					
Sierra	39	60	overflow						
Arlington	16	60	13	27	40	queue diss			
Keystone	24	60	20	overflow					
Lake	8	60	7	13	20	27	queue diss		
West	3	60	3	6	8	11	queue diss		
Ralston	4	60	3	7	10	14	queue diss		
Washingto	2	60	2	3	5	queue diss			
Sutro	13	60	10	21	31	41	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	4	60	4	7	11	queue diss			
Evans	13	60	11	21	32	43	overflow		

2015-AM PEAK NORTHBOUND

	Time When Queue Begi	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center	120	152	32	2	31	1	2	46	31	31	31	31	31	200
Virginia	120	132	12	1	24	0	2	24	23	15				62
Sierra					0									
Arlington	240	165	-75	-4		-1	1	0						
Keystone	240	143	-97	-5		-2	1	0						
Lake														
West														
Ralston														
Washingto														
Sutro	120	222	102	5	47	2	2	47	52	52	52	52	52	308
Morrill														
Vine														
Evans														

2015-AM PEAK SOUTHBOUND

	Time When Queue Begi	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Total Delay min
Center														
Virginia	120	132	12	1	24	0	2	35	31					66
Sierra	60	152	92	5	90	2	2	90	90	82	75	68	61	465
Arlington	240	165	-75	-4		-1	1	0						
Keystone	120	143	23	1	28	0	2	28	28	25	21	17	14	133
Lake														
West														
Ralston														
Washingto														
Sutro														
Morrill														
Vine														
Evans	300	222	-78	-4		-1	1							

2015-PM PEAK NORTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center	120	271	151	3	83	3	2	125	87	79	71	63	55			481
Virginia	120	162	42	1	25	1	2	25	25	17						66
Sierra																
Arlington	240	164	-76	-1		-1	1	0								
Keystone																
Lake																
West																
Ralston																
Washingto																
Sutro	120	222	102	2	32	2	2	32	32	25	18	11				117
Morrill																
Vine																
Evans																

2015-PM PEAK SOUTHBOUND

	Time When Queue Beg	Time When Queue Clea	Duration of Queue at Intersection	Number of cycles with Queue	Backup Due to Queue (veh/ln)	No. of Cycle Before Queue Dissipates	No. of Cycle To Clear Queue at Intersecti	Delay cycle 1 min	Delay cycle 2 min	Delay cycle 3 min	Delay cycle 4 min	Delay cycle 5 min	Delay cycle 6 min	Delay cycle 7 min	Delay cycle 8 min	Total Delay min
Center																
Virginia	120	162	42	2	48	1	2	48	48	39	31	23	15			204
Sierra	60	153	93	5	90	2	2	136	97	83	69	55	42	28		483
Arlington	240	164	-76	-4		-1	1	0								
Keystone	120	152	32	2	53	1	2	53	53	40	27	14				187
Lake																
West																
Ralston																
Washingto																
Sutro																
Morrill																
Vine																
Evans	300	222	-78	-4		-1	1	0								

City of Reno Rail Delay Study
2015 - AM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	61	20	408	3	220	yes	31	60	30	1450	0.40	152	204
Virginia	36	18	359	2	210	yes	24	60	30	979	0.27	132	178
Sierra													
Arlington	49	24	487	2	560	no		60	30	1062	0.29	165	229
Keystone	61	20	409	3	580	no		60	30	1546	0.43	143	196
Lake	33	16	325	2	550	no		60	30	528	0.15	222	257
West	14	14	278	1	560	no		60	30	226	0.06	222	251
Ralston	17	17	332	1	570	no		60	30	270	0.07	222	258
Washingto	8	8	163	1	580	no		60	30	132	0.04	222	238
Sutro	50	25	504	2	220	yes	47	60	30	820	0.23	222	282
Morrill	1	1	20	1	820	no		60	30	17	0.00	222	224
Vine	18	9	179	2	540	no		60	30	292	0.08	222	240
Evans	52	26	522	2	550	no		60	30	847	0.24	222	285

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	*Vehicles in Queue*						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	24	60	24	overflow					
Virginia	16	60	16	overflow					
Sierra									
Arlington	18	60	18	35	53	overflow			
Keystone	26	60	26	52	77	overflow			
Lake	9	60	9	18	26	35	queue diss		
West	4	60	4	8	11	15	queue diss		
Ralston	4	60	4	9	13	18	queue diss		
Washingto	2	60	2	4	7	queue diss			
Sutro	14	60	14	overflow					
Morrill	0	60	0	1	1	queue diss			
Vine	5	60	5	10	15	queue diss			
Evans	14	60	14	28	42	overflow			

City of Reno Rail Delay Study
2015 - AM Peak Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	0	0	0	2	150	yes	24	60	30	801	0.22	132	132
Sierra	29	15	294	3	160	yes	90	60	30	2510	0.70	152	187
Arlington	106	35	707	2	540	no		60	30	869	0.24	165	284
Keystone	40	20	398	2	330	yes	28	60	30	1265	0.35	143	192
Lake	50	25	502	2	530	no		60	30	432	0.12	222	292
West	27	13	266	1	550	no		60	30	185	0.05	222	250
Ralston	11	11	227	1	540	no		60	30	221	0.06	222	245
Washingto	14	14	271	1	530	no		60	30	108	0.03	222	251
Sutro	7	7	133	2	560	no		60	30	671	0.19	222	235
Morrill	41	21	413	1	560	no		60	30	14	0.00	222	269
Vine	1	1	17	2	577	no		60	30	239	0.07	222	223
Evans	15	7	147	2	530	no		60	30	693	0.19	222	237

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	13	60	13	overflow					
Sierra	42	60	overflow						
Arlington	14	60	14	29	43	overflow			
Keystone	21	60	21	overflow					
Lake	7	60	7	14	22	29	queue diss		
West	3	60	3	6	9	12	queue diss		
Ralston	4	60	4	7	11	15	queue diss		
Washingto	2	60	2	4	5	queue diss			
Sutro	11	60	11	22	34	45	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	4	60	4	8	12	queue diss			
Evans	12	60	12	23	35	46	overflow		

City of Reno Rail Delay Study
2015 - PM Peak Northbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center	109	36	728	3	220	yes	83	60	30	1450	0.40	271	408
Virginia	36	18	360	2	210	yes	25	60	30	801	0.27	162	224
Sierra													
Arlington	40	20	396	2	560	no		60	30	869	0.29	164	235
Keystone	53	18	356	3	580	no		60	30	1265	0.43	152	215
Lake	27	13	266	2	550	no		60	30	432	0.15	222	261
West	11	11	227	1	560	no		60	30	185	0.06	222	254
Ralston	14	14	271	1	570	no		60	30	221	0.07	222	262
Washingto	7	7	133	1	580	no		60	30	108	0.04	222	240
Sutro	41	21	413	2	220	yes	32	60	30	671	0.23	222	289
Morrill	1	1	17	1	820	no		60	30	14	0.00	222	224
Vine	15	7	147	2	540	no		60	30	239	0.08	222	242
Evans	43	21	427	2	550	no		60	30	693	0.24	222	292

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center	24	60	24	overflow					
Virginia	16	60	16	overflow					
Sierra									
Arlington	18	60	18	35	53	overflow			
Keystone	26	60	26	52	77	overflow			
Lake	9	60	9	18	26	35	queue diss		
West	4	60	4	8	11	15	queue diss		
Ralston	4	60	4	9	13	18	queue diss		
Washingto	2	60	2	4	7	queue diss			
Sutro	14	60	14	overflow					
Morrill	0	60	0	1	1	queue diss			
Vine	5	60	5	10	15	19	queue diss		
Evans	14	60	14	28	42	overflow			

City of Reno Rail Delay Study
2015 - PM peak2 Southbound
Evaluation of Queue

	Vehicles in Queue (vehicles)	Vehicles in Queue per Lane (veh/ln)	Length of Queue (feet)	Number of Lanes (lanes)	Distance to Adjacent Int (feet)	Will Vehicles Impact Adj Intersection?	Number of Vehicles in Overflow (feet)	Cycle at Adjacent Intersection (sec)	Cycle at Adjacent Intersection (sec)	total approach flow rate (vph)	through Flow Rate (veh/sec)	Gate Down Time (sec)	Time When Queue Dissipates (sec)
Center													
Virginia	44	22	441	2	150	yes	48	60	30	979	0.27	162	245
Sierra	107	36	711	3	160	yes	90	60	30	2510	0.70	153	365
Arlington	48	24	484	2	540	no		60	30	1062	0.29	164	260
Keystone	65	33	653	2	330	yes	53	60	30	1546	0.43	152	328
Lake	33	16	325	2	530	no		60	30	528	0.15	222	271
West	14	14	278	1	550	no		60	30	226	0.06	222	263
Ralston	17	17	332	1	540	no		60	30	270	0.07	222	273
Washingto	8	8	163	1	530	no		60	30	132	0.04	222	244
Sutro	50	25	504	2	560	no		60	30	820	0.23	222	310
Morrill	1	1	20	1	560	no		60	30	17	0.00	222	224
Vine	18	9	179	2	577	no		60	30	292	0.08	222	247
Evans	52	26	521	2	530	no		60	30	847	0.24	222	314

	Vehicles Through Int Per Cycle (veh)	Length of Cycle (sec)	Vehicles in Queue						
			Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7
Center									
Virginia	16	60	13	overflow					
Sierra	42	60	overflow						
Arlington	18	60	14	29	43	overflow			
Keystone	26	60	21	overflow					
Lake	9	60	7	14	22	29	queue diss		
West	4	60	3	6	9	12	queue diss		
Ralston	4	60	4	7	11	15	queue diss		
Washingto	2	60	2	4	5	queue diss			
Sutro	14	60	11	22	34	45	queue diss		
Morrill	0	60	0	0	1	queue diss			
Vine	5	60	4	8	12	queue diss			
Evans	14	60	12	23	35	46	overflow		

United States of America

Before the

SURFACE TRANSPORTATION BOARD

F.D. No. 32760

Union Pacific Corporation et al.--
Control and Merger -- Southern Pacific Corporation et al.

VERIFIED STATEMENT OF ABBAS MOHADDES

My Name is Abbas Mohaddes. I am currently a Principal with Meyer, Mohaddes Associates and maintain offices at 3010 Old Ranch Parkway, Suite 350, Seal Beach, California. My functional responsibilities include all aspects of traffic analysis, document preparation and project management.

I have served as project manager for Meyer, Mohaddes Associates in the traffic analysis for the merger of the Union Pacific and Southern Pacific railroads, and its affect on traffic delays and levels of service in the City of Reno.

The attached document entitled, "Traffic/Delay Analysis Final Draft" dated October 3, 1997 was a product I prepared for and provided to the Nevadans for Fast/Responsible Action.

The factual information contained in the report was obtained from

identified public sources as well as statements provided by the various state and local officials in charge of agencies having public health, safety and environmental responsibilities.

The attached report contains information relevant to the Preliminary Mitigation Plan for Reno Nevada dated September 15, 1997.

The contents of the "Traffic/Delay Analysis Final Draft" attached hereto are incorporated herein for the purpose of this statement.

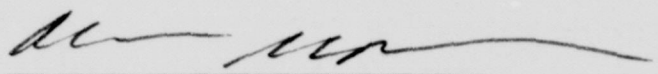
Respectfully Submitted,

Abbas Mohaddes

VERIFICATION

I, Abbas Mohaddes, declare under penalty of perjury that the foregoing statement and attachments hereto, are true and correct.

Executed on October 10, 1997.



Abbas Mohaddes



AIR SCIENCES INC.

ANALYSIS OF AIR EMISSION INCREASES RESULTING FROM THE UNION PACIFIC AND SOUTHERN PACIFIC RAILROAD MERGER AND EFFECTS ON THE MANAGEMENT OF THE AIR RESOURCE OF THE TRUCKEE MEADOWS NONATTAINMENT AREA

PREPARED FOR:

NEVADANS FOR FAST AND RESPONSIBLE ACTION

PROJECT 95-10
OCTOBER 1997

EXECUTIVE SUMMARY

Analysis of Air Emission Increases Resulting From the Union Pacific and Southern Pacific Railroad Merger and Effects on the Management of the Air Resource of the Truckee Meadows Nonattainment Area

Prepared for:

Nevadans for Fast and Responsible Action

Prepared by:

Air Sciences Inc.

Project 95-10

October 1997

Associated with the merger of the Union Pacific (UP) and Southern Pacific (SP) railroads will be an impact on the air quality of the Truckee Meadows Basin. This report addresses the impact on the Truckee Meadows air quality from both a technical and regulatory perspective. Two pollutants of concern are carbon monoxide (CO) and nitrogen oxides (NO_x). The merger will cause increases in the emissions of CO and NO_x, and these increases will occur in the Truckee Meadows area. The Truckee Meadows area is designated as a nonattainment area for CO and NO_x because of measured levels of CO and ozone (NO_x is a precursor of ozone) that are higher than the health-based National Ambient Air Quality Standards (NAAQS). Results of the analysis presented in this report are as follows.

- Because the dispersion characteristics of Truckee Meadows are poor, its air quality is particularly sensitive to increases in emissions.

- The area is designated non-attainment for carbon monoxide, ozone, and particulates. This means that measured concentrations of these pollutants have exceeded the health-based standards and the U.S. EPA has determined that special control measures are necessary to decrease these concentrations.

- Emissions of CO during the mid-morning hours of winter days are of greatest concern for CO sources. Emissions of NO_x during the summer days are of greatest concern for NO_x sources. It is most important to minimize increases in emissions during these times.

- Under certain train-use scenarios there will be increases of more than 100 tons per year of CO. This represents less than 1 percent of the Truckee Meadows' inventory.

- Under the 24-train scenarios, NO_x emissions could increase approximately 400 tons per year which is about 5 percent of the Truckee Meadows air basin inventory. Under the 36-train scenario the emissions could increase NO_x emissions in Truckee Meadows 800 tons per year, which is 10 percent of the inventory. These are significant increases.

- These increases may trigger a rewrite of the Truckee Meadows (and Washoe County) control plan for carbon monoxide and ozone. The plan may include additional control measures which carry a financial and lifestyle cost for the resident and business communities.

- The federal conformity rule requirements apply to the proposed merger due to the STB's ongoing responsibility for emission increases that can be directly attributed to the UP/SP merger.

- The federal conformity rule requirements are applicable to the UP/SP merger based on the fact that increases in direct and indirect emissions of CO and NO_x due to the merger exceed the de minimis levels in the conformity rule.

- At a minimum, the STB is compelled to formally assess the conformity of the merger to the applicable SIP requirements. The technical analyses contained herein suggest that the merger does not conform with the purpose of the SIP.

- The NEPA requirements indicate a need to analyze air quality impacts due to the proposed merger in the comprehensive Environmental Impact Statement process.

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1.0 INTRODUCTION

Associated with the merger of the Union Pacific (UP) and Southern Pacific (SP) railroads will be an impact on the air quality of the Truckee Meadows Basin. This report addresses the impact on the Truckee Meadows air quality from a technical and regulatory perspective. One pollutant of concern is carbon monoxide (CO) because ambient monitoring in the Truckee Meadows area, which includes Reno and Sparks (shown on Figure 1.1), has recorded high levels of CO and the area has been designated "nonattainment" for CO (i.e., ambient concentrations of CO have exceeded the health-based National Ambient Air Quality Standards for CO). Of equal concern are increases in ambient concentrations of ozone (O_3). The Truckee Meadows area is located in Washoe County, shown on Figure 1.2, which is designated nonattainment for O_3. Ozone is not directly emitted into the atmosphere, but forms from several precursors including oxides of nitrogen (NO_x). The UP/SP merger will also result in an increase in NO_x emissions within the O_3 nonattainment area.

Volatile organic compounds (VOCs) are a precursor of ozone, but since VOC emission changes due to the merger are small, they are not further addressed. The Truckee Meadows Basin is also designated nonattainment for inhalable particulates (PM_{10}) and high concentrations of PM_{10} continue to be monitored in this area. Since increases in PM_{10} emissions due to the UP/SP merger are expected to be small, PM_{10} emissions are not addressed in this report.

This report focuses on the CO and NO_x emissions associated with the increased railroad traffic and vehicle traffic congestion resulting from the merger, and focuses only on Truckee Meadows. County-wide effects are not discussed. The merged railroad will benefit from better economics by using the tracks which come from California over Donner Pass and through Truckee Meadows instead of the longer existing Union Pacific tracks along Feather River to the north. With the greater volume of trains through Truckee Meadows, there will be substantial increases in vehicle delays at most of the 15 rail crossings in the Truckee Meadows Basin.

Truckee Meadows is designated a moderate nonattainment area for carbon monoxide by the U.S. EPA because of violations of the national eight-hour carbon monoxide standard recorded in Reno. The larger Washoe County region, which includes Truckee Meadows, is designated a marginal nonattainment area for ozone by the U.S. EPA because of violations of the one-hour ozone standard as measured in Reno and Sparks, the Truckee Meadows area of the county. The Washoe County District Health Department, Air Quality Management Division (AQMD), has been delegated authority over the air quality management of the county, and has initiated special emission controls for CO and NO_x as a precursor of ozone for the purpose of decreasing emissions and bringing the ambient CO and O_3 concentrations into attainment of the health standards. These controls place lifestyle and financial burdens on the businesses and residents in these planning

FIGURE 1.1

TRUCKEE MEADOWS BASIN

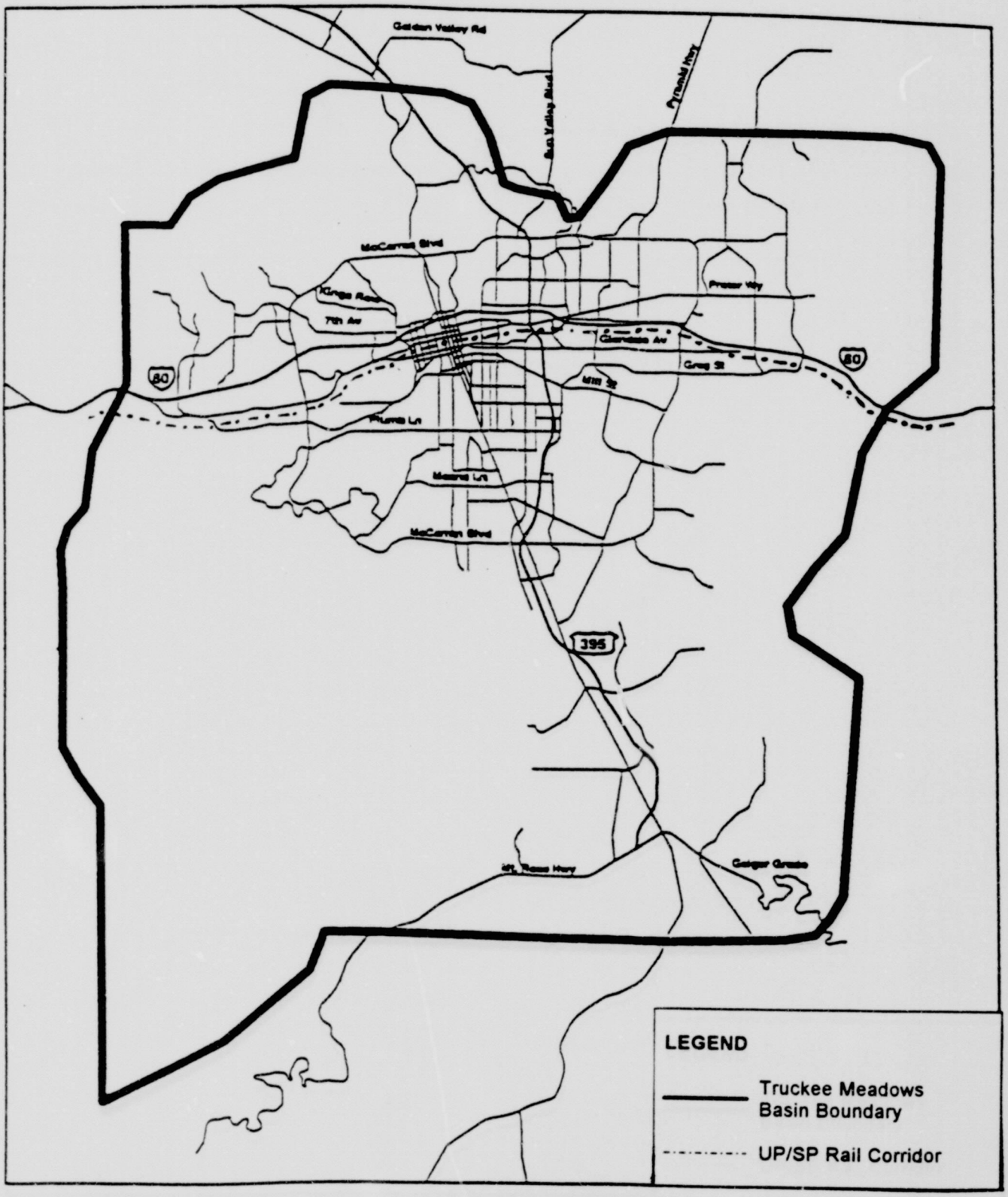
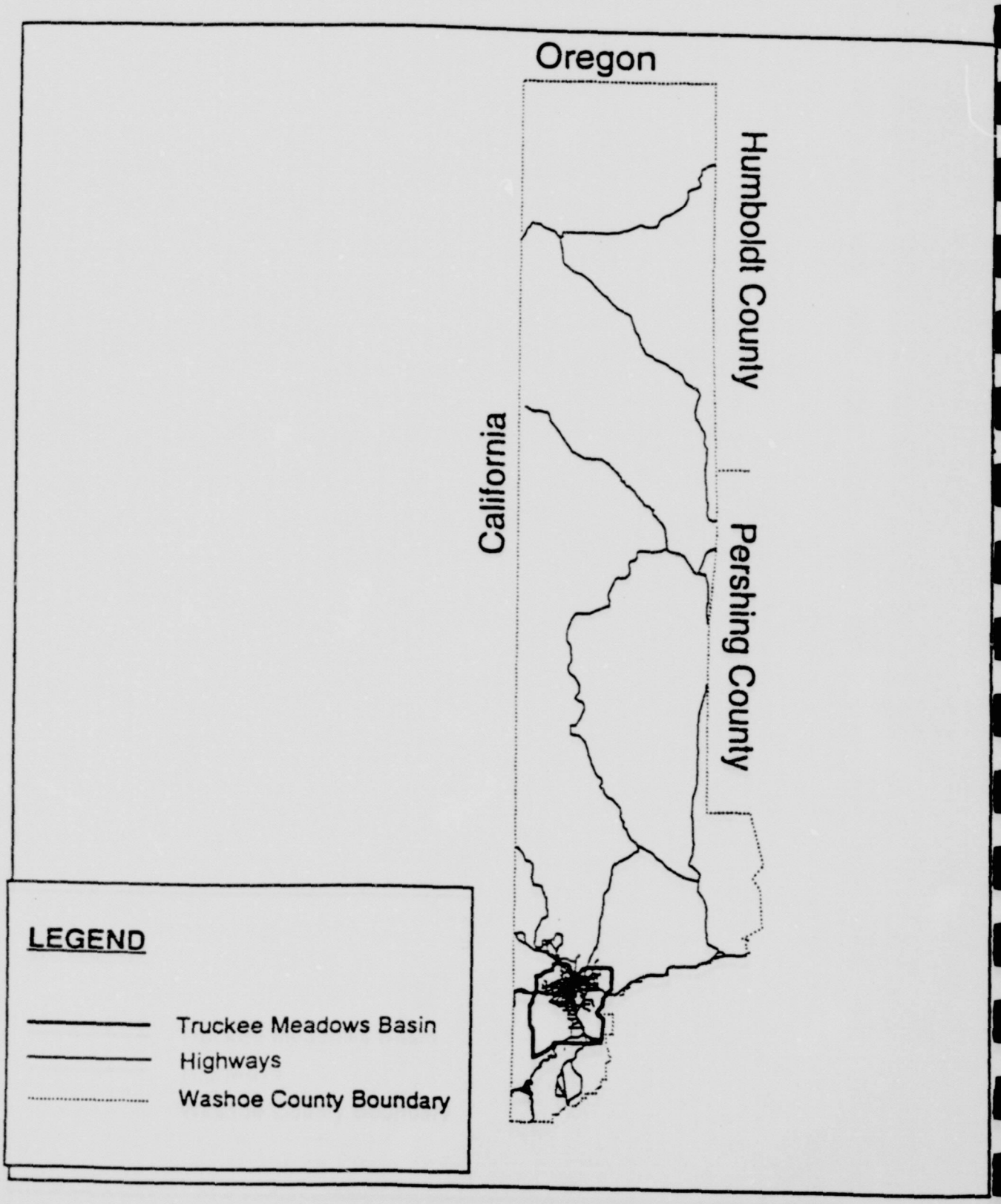


FIGURE 1.2

WASHOE COUNTY AIR QUALITY ANALYSIS AREA



areas, and these controls are implemented as a direct response to the existing elevated concentrations of these pollutants. With an increase in these concentrations caused by the additional railroad traffic and associated increase in traffic congestion, Truckee Meadows' air quality may again violate standards and the burden of additional emission controls may again be placed on the businesses and citizens within the basin.

In addition, there are legal manifestations of the railroad merger and associated emissions increases that must also be considered. These arise from the Federal Clean Air Act (CAA) and the National Environmental Policy Act (NEPA). Both acts place requirements on the railroad and any controlling agency (in this case the Surface Transportation Board) to consider the effect of the railroad merger on air quality. The nonattainment status of Truckee Meadows and Washoe County intensify the legal requirements to address the air quality impacts associated with the UP/SP merger.

1.1 Purpose of the Study

This study provides a review of the current status of measured concentrations of CO and O_3 in Truckee Meadows, as measured in downtown Reno and Sparks, and a brief description of the dispersion conditions in the Truckee Meadows Basin. The purpose of this information is to show why there is a concern with increasing emissions of CO and NO_x (an O_3 precursor) into the Truckee Meadows Basin.

In addition, there are calculations of the current and projected emissions of CO and NO_x resulting from the locomotives and the associated traffic congestion caused by trains passing through the air basin. Included in the calculations are emissions for 1995, the "baseline" year, and net emission increases for three levels of train activity, 12.7, 24, and 36 trains through Reno per day, and three points of time in the future, the years 2000, 2007, and 2015.

This report also presents the legal air quality requirements of the railroad and federal agencies that have approval authority for the railroad merger.

1.2 Available Data Sources

The Washoe County air quality ambient data and emissions inventories are available from the AQMD, the agency delegated the authority and responsibility to implement the requirements of the Federal Clean Air Act and to manage all aspects of ambient air quality monitoring, emissions

tracking, and emissions control within the territorial limits of the Washoe County Health District[1]. The AQMD has collected ambient concentration data at several stations within the air basin including the Reno and Sparks stations. Hourly CO data are available from 1988 through the present and hourly O_3 data are available from 1989 through the present. The AQMD has assembled the county and Truckee Meadows emission inventories for CO and NO_x and developed the emission control programs for the areas. Meteorological data are available from Reno-Cannon International Airport located approximately 3 miles southeast of the city's center and at 4,400 feet ASL, approximately the same elevation as the two cities' center.

Emissions in this report are developed from AQMD estimates, U.S EPA emission factors, and source activity levels. The present and projected air basin inventories are taken from AQMD estimates.[2, 3, 4] Projections of locomotive emissions are ratioed from AQMD estimates. CO and NO_x emissions from vehicle delay at gate crossings are developed from U.S. EPA emission factors (MOBILE5b emissions model) and vehicle delay time from a recent traffic analysis of the effect of the merger.[5]

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[1] District Board of Health Regulations Governing Air Quality Management, District Health Department, updated October 1995, Section 020-0051.

[2] Truckee Meadows Non-attainment Area 1993 Emission Inventory for Carbon Monoxide, November 1995, Washoe County District Health Department, Air Quality Management Division.

[3] Washoe County, Nevada, Redesignation Request and Maintenance Plan (Maintenance Plan) for the National Ozone Standard - Draft. Second Edition, November 1996, Washoe County District Health Department, Air Quality Management Division.

[4] Washoe County, Nevada, Ozone Non-Attainment Area 1993 Emission Inventory of Ozone Precursors, November 1995, AQMD.

[5] "UP/SP Railroad Merger - Traffic/Delay Analysis" September 1997, Meyer Mohaddes Associates, Inc.

2.0 AIR BASIN AMBIENT CONDITIONS

The Truckee Meadows area follows the boundaries of Hydrographic Basin #87[6], as shown on Figure 1.1, and has an approximate elevation of 4,400 feet. The basin is bounded on the west by the Sierra-Nevada foothills at elevations of 8,000 to 9,000 feet and on the east by hills that rise 6,000 to 7,000 feet. This physical arrangement creates a natural "bowl" where pollutants can frequently become trapped[7]. The Truckee River, which runs through the center of the basin, flows out a narrow gap in the ridge to the east, toward Fernley, too narrow for significant air drainage. The basin has a north-south axis defined by a distinct north-south valley. The valley begins about 14 miles to the north in the Spanish Springs Valley, and continues about 12 miles to the south of Reno to Steamboat. There is no significant drainage outlet for pollutants at either end so under inversion conditions emissions will remain and will leave the basin only after the inversion breaks, enabling emissions to move vertically out of the basin.

2.1 Dispersion Meteorology

Winds within the basin are represented by measurements taken at the Reno-Cannon Airport from 1989 through 1994. The distribution of the annual winds is shown as wind rose Part A on Figure 2.1. Three characteristics of the meteorological data set are noteworthy: 1) the winds are nearly evenly distributed throughout the 16 ordinal directions of the compass, 2) the average speed is a moderate 3.7 meters per second, and 3) there is a relatively high frequency of calms (less than 0.5 m/s wind speed) at 14 percent. The low-speed winds, typically associated with times of high pollution events, are also nearly evenly distributed about the compass. This distribution of winds is an indication of negligible drainage flow out of the basin. Under inversion or otherwise stagnant conditions, the meteorological data suggest that air drifts randomly within the basin. Meteorological data for winter months (November, December, and January) demonstrate these stagnant conditions even more dramatically. Wind rose Part B on Figure 2.1 shows a higher frequency of calm conditions (24.3 percent), a lower average wind speed (3.1 m/s), and a more even distribution of wind direction. The topographic and meteorological conditions of the Reno area promote stagnant conditions which foster high impacts in relation to the level of emissions.

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[6] *Truckee Meadows Non-Attainment Area, 1993 Emissions Inventory for Carbon Monoxide, November 1995, Washoe County District Health Department, Air Quality Management Division, p. 1-1.*

[7] *Nevada State Implementation Plan for Truckee Meadows Air Basin, Particulate Matter (PM_{10}), Truckee Meadows Regional Planning Agency and Washoe County District Health Department, AQMD, September 1991, p. 4.*

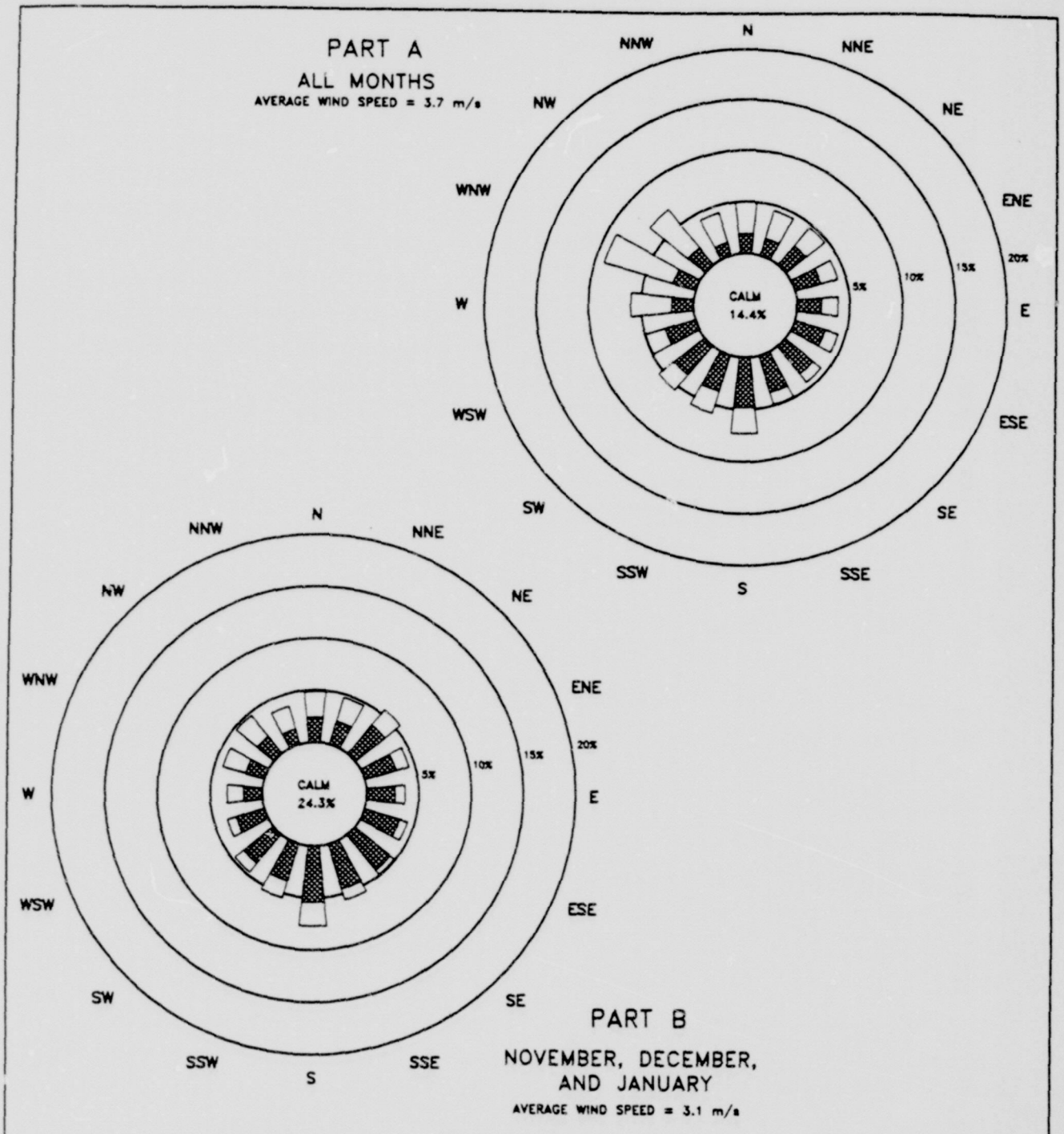

FIGURE 2.1
WIND FREQUENCY DISTRIBUTION
JANUARY 1987 – DECEMBER 1991
RENO – CANNON INTERNATIONAL AIRPORT

AIR SCIENCES INC.
LAKEWOOD, COLORADO

2.2 Carbon Monoxide

Ambient concentration data are collected at several stations throughout the air basin. The Reno monitoring station is located one block north of the railroad corridor at East Plaza and Lake which is two blocks east of Virginia. This station measures maximum air basin carbon monoxide concentrations and is well located in the center of Reno to monitor the effects of vehicle emissions in this downtown area. This station is also located to monitor increases in CO levels due to increased vehicle emissions caused by traffic congestion associated with traffic delays at downtown railroad crossings. The Sparks monitoring station is located four miles east-northeast of the Reno station in an older residential area at Fourth and Prater, about 4,400 feet north of the railroad corridor and the Sparks switchyard. The density of vehicle traffic is considerably less than at the Reno station. The Sparks station also monitors elevated CO concentrations. Both stations are a part of the National Air Monitoring Stations (NAMS) network, which are U.S. EPA sponsored stations, and considered stations with high levels of quality control.

The CO concentrations for 1996 by month are shown on Figures 2.2 and 2.3.[8] There is a clear peak in the Reno data that averages approximately 1.7 ppm in the months of November, December, and January. This average of these winter monthly concentrations is approximately twice the average during the summer months of May, June, and July (approximately 0.8 ppm). Sparks shows the same trend (a wintertime peak that is approximately twice the summertime average), but the peak concentrations at the Sparks station (1.2 ppm) are lower than the Reno peak concentrations.

CO concentrations by time of day at the Reno and Sparks stations are shown on Figures 2.4 and 2.5, respectively. From the Reno data, it is clear that the hour of maximum concentration is 800 hours with the concentration of approximately 1.8 at Reno and 2.0 ppm for Sparks. These hourly concentration graphs indicate the time of maximum eight-hour concentration to be from 400 through 1200 hours for both Reno and Sparks.

2.3 Ozone

Ozone is a basin-wide pollutant that is formed from a complex reaction of several pollutants, principally volatile organics and nitrogen oxides, in the presence of sunlight. The highest concentration often occurs well downwind from the precursor pollutant emission sources and some period of time after the precursor pollutants are emitted. Thus, temporal correlations of

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[8] Data provided in hourly format on disk by Washoe County AQMD, August 19, 1997.

Figure 2.2
CO Concentration by Month
Reno Station - 1996

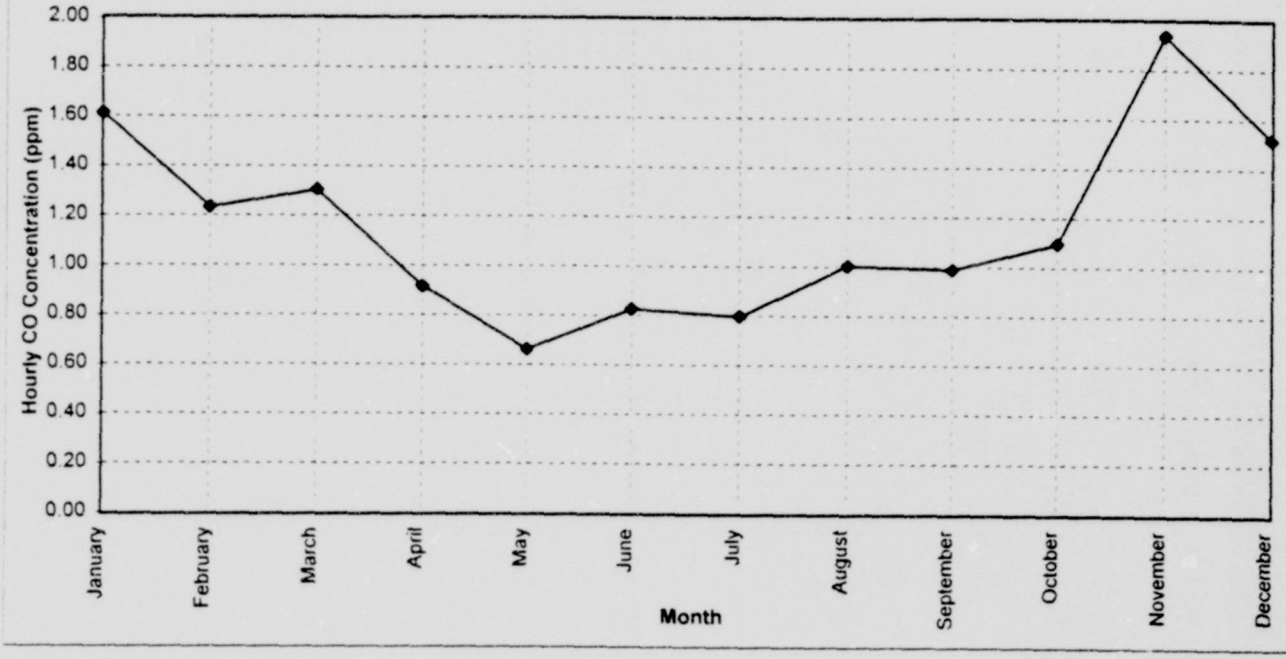


Figure 2.3
CO Concentration by Month
Sparks Station - 1996

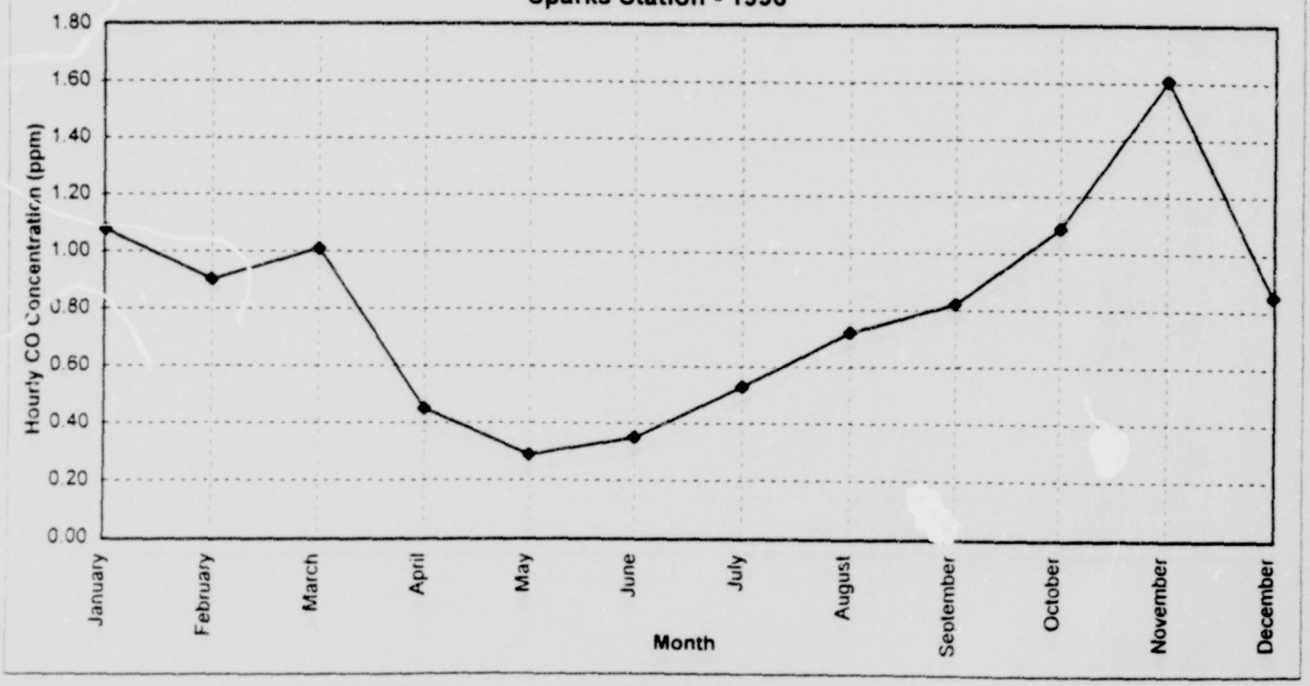


Figure 2.4
CO Concentration by Time of Day
Reno Station - 1996

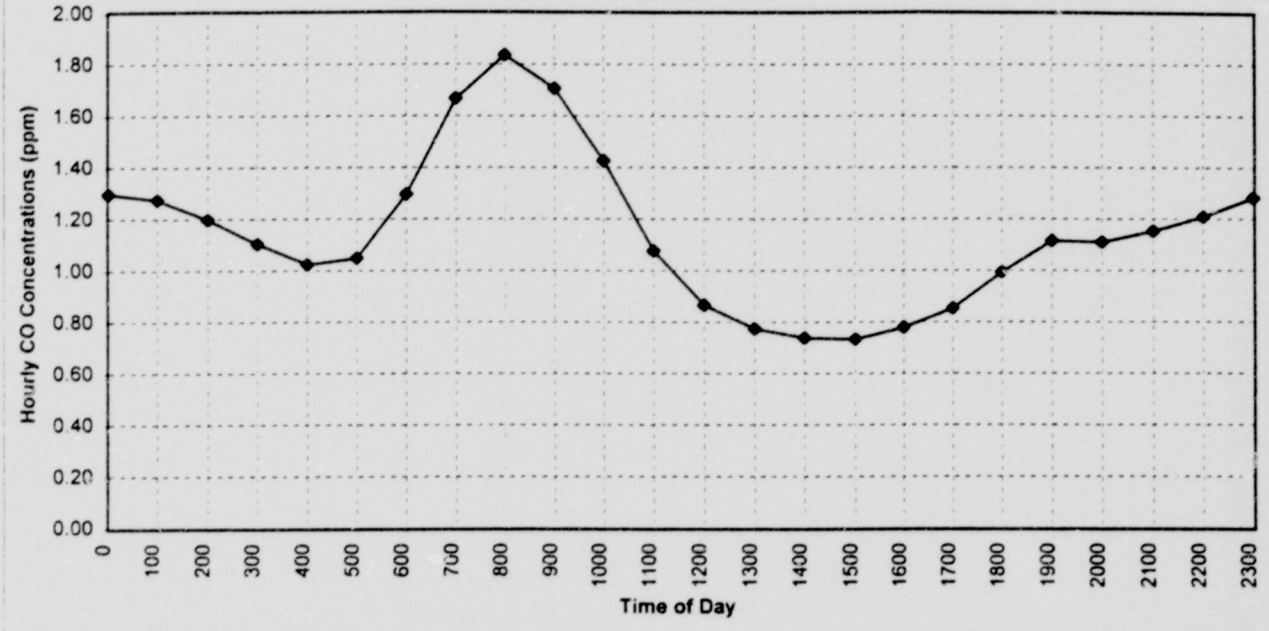
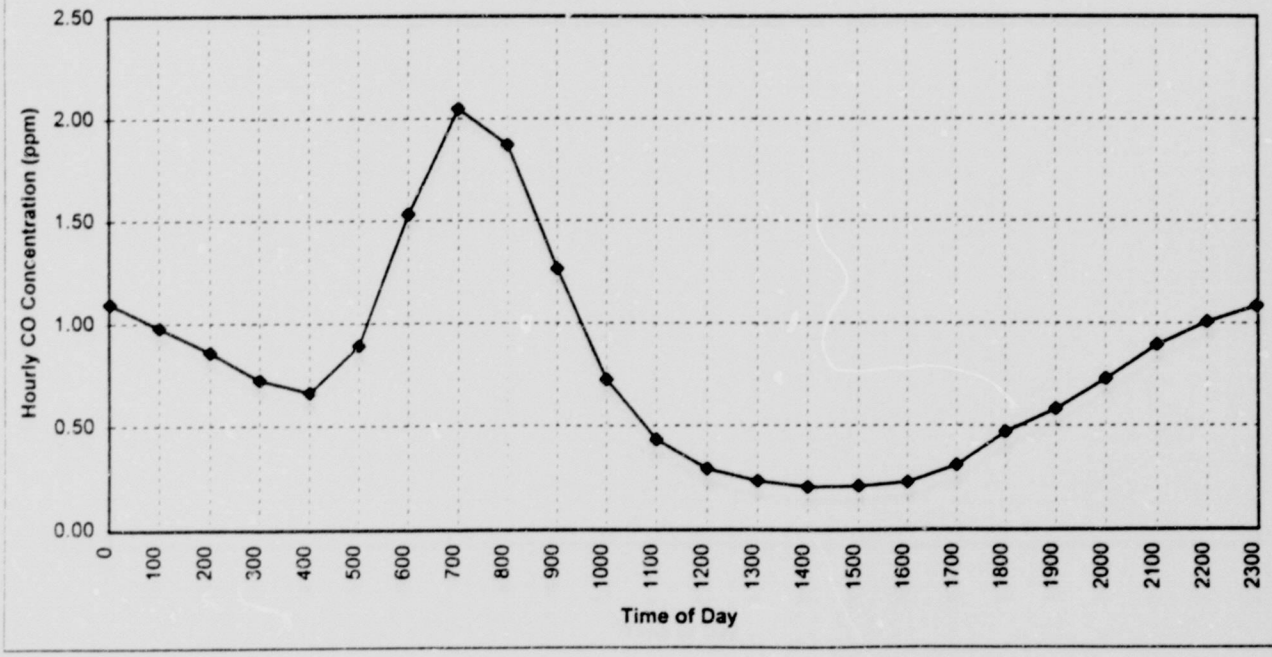


Figure 2.5
CO Concentration by Time of Day
Sparks Station - 1996



concentration with emissions throughout the air basin on time scales less than one day are not useful. (High ozone concentrations lag the high precursor emissions by several hours.) However, correlations of emissions of precursors to ozone concentrations on a seasonal scale are meaningful. Highest concentrations are measured at the Sparks station (second-high hourly value of 85 ppb in 1995). Concentrations at the Reno station are only slightly lower (second-high hourly value of 83 ppb in 1995).

Figures 2.6 and 2.7 display the 1996 monthly average ozone concentrations for Reno and Sparks, respectively.[9] The months of May through August have the highest concentrations. Increases of emissions of the ozone precursors (VOCs and NO_x) during these months will increase the maximum ozone concentrations and have the greatest chance of affecting the nonattainment status of Washoe County.

2.4 Summary of Times of Highest Impacts

This ambient CO monitoring data indicate that the carbon monoxide concentrations are highest in Reno, and in the winter months, and between the hours of 400 and 1200 hours. Emissions from increases in railroad usage and the associated vehicle congestion during winter and morning hours are of greatest concern in relation to the carbon monoxide concentrations and have the greatest chance of affecting the carbon monoxide nonattainment status of Truckee Meadows. Emissions of NO_x during the months of May through August will have the greatest chance of affecting the nonattainment status of Washoe County.

[9] Data provided in hourly format on disk by Washoe County AQMD, August 19, 1997

Figure 2.6
Ozone Concentration by Month
Reno Station - 1996

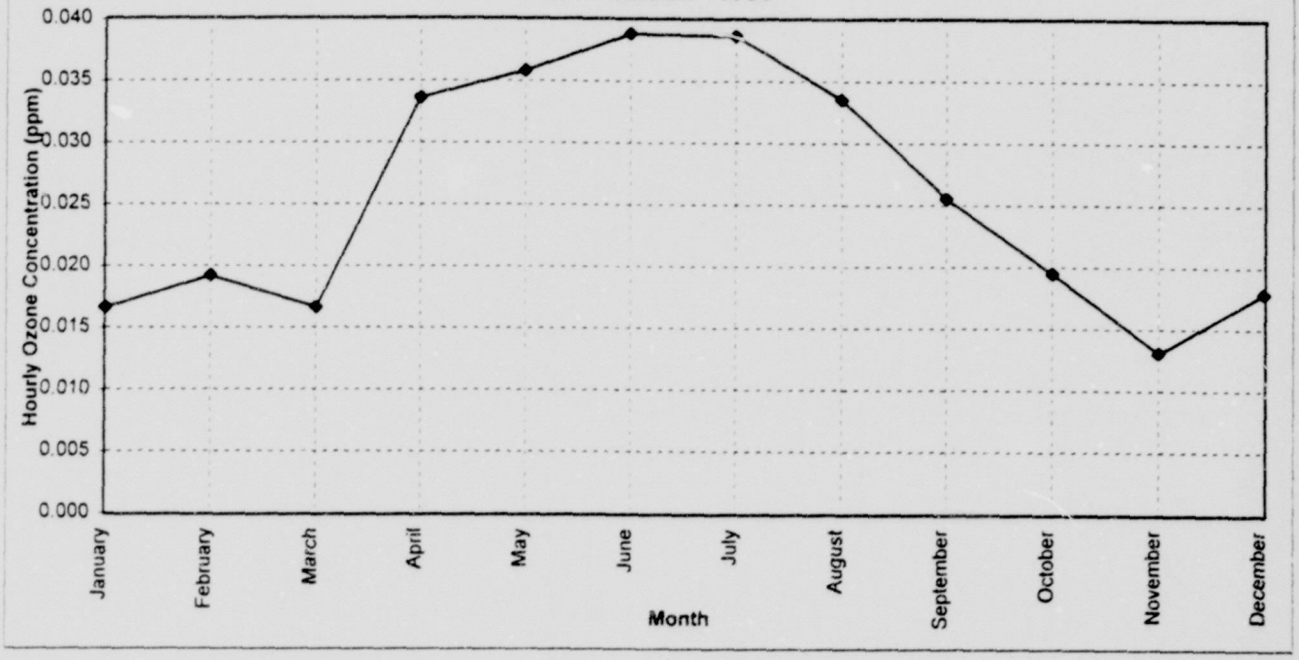
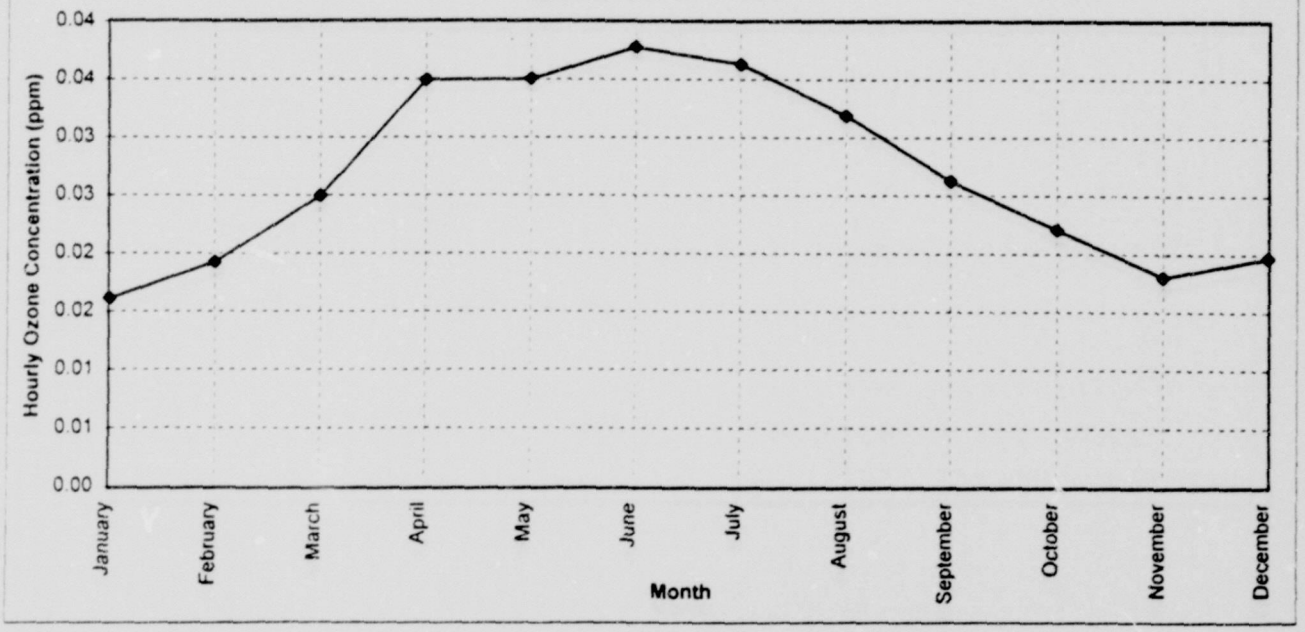


Figure 2.7
Ozone Concentration by Month
Sparks Station - 1996



3.0 AIR BASIN EMISSIONS ESTIMATES FOR SEVERAL FUTURE TRAIN TRAFFIC SCENARIOS

At any point in time in the future, emissions of CO and NO_x in the Truckee Meadow Air Basin will be greater with the railroad merger than without the railroad merger. These emissions are a result of increased locomotive use in the basin and increased traffic congestion at the intersections of city streets with the railroad tracks. Vehicle congestion equates to higher emissions because it causes delays and vehicle queues at the railroad crossings. During these delays there are additional vehicle accelerations, decelerations, and idling, which emit more emissions than free flowing vehicle traffic over the same segment of road. With greater frequency of freight trains through the basin there is also expected to be increased switchyard locomotive activity in Sparks. Annual emissions of carbon monoxide and nitrogen oxides are calculated herein for both freight and switchyard locomotives, and vehicles. Because the exact magnitude of the increase in rail use through Reno has not been not defined by the railroad, two scenarios are studied for this analysis: 24 trains per day and 36 trains per day. The emissions for these two scenarios are compared with the baseline emissions of 12.7 trains per day (the 1995 Reno freight train volume).

Of the 15 track/street intersections in Truckee Meadows, 13 carry the bulk of the traffic and will experience the greatest delays. It is these 13 at-grade crossings (Center, Virginia, Sierra, Arlington, Keystone, Lake, West, Ralston, Washington, Sutro, Morrill, Vine, and Evans) on which this analysis focuses.

Calculations in the following four subsections, 3.1 - 3.4, estimate the emissions resulting from the railroad merger. The altered emissions are compared with the 1995 baseline emissions in order to estimate the net change in emissions as a direct result of the merger. Subsection 3.5 addresses Truckee Meadows air basin's total emissions to illustrate the magnitude of the effect of the merger on the air basin.

3.1 Statistics on the Trains and Vehicles

A substantial amount of locomotive and vehicular traffic data and associated emission estimates have been generated for this analysis. Specifically, estimates of vehicular traffic data (in terms of number of acceleration/deceleration cycles and total delay time), and total emissions (including locomotive emissions and vehicular traffic emissions) have been generated for each of the three assumed levels of railroad traffic; the current level of 12.7 trains per day and two future levels of 24 and 36 trains per day for each planning year. The planning years consist of baseline

(1995) and three future planning years of 2000, 2007, and 2015. Therefore, there are a total of 12 scenarios of railroad traffic levels and planning years for which data was generated for this analysis.

Of these 12 scenarios for which traffic data and total emissions have been estimated, only 10 are useful to this analysis and only data from these scenarios are presented. One scenario, 12.7 trains in 1995, represents the "baseline" conditions that existed in 1995. The emissions estimates generated for this baseline scenario are subtracted from the emissions scenarios generated for future, post-merger scenarios to estimate the net change in emissions due to the railroad merger. For conformity determinations, the "no-build" scenarios of 12.7 trains per day, for years 2000, 2007, and 2015 are presented. The other six critical future planning scenarios are 24 and 36 trains in years 2000, 2007, and 2015.

Estimates of vehicle emissions due to an increase in delays caused by an increase in railroad gate downtime at at-grade intersections are a function of the number of deceleration/ idle/acceleration cycles and total idle times. Therefore, these data, expressed in terms of total daily delay time, have been generated for the 13 at-grade crossings in Reno for the baseline and future planning years. These cycle and delay data have been generated by Meyers, Mohaddes Associates, Inc.,[10] a traffic engineering firm that has analyzed recent Reno traffic patterns. The sums of the daily delay times combined for the 13 intersections with each level of railroad traffic and future are presented in Table 3.1.

TABLE 3.1
TOTAL DAILY DELAY TIMES
(hours)

Railroad Traffic Levels (trains per day)	Years			
	1995	2000	2007	2015
12.7	188	251	262	310
24	--	473	495	587
36	--	714	742	880

The total daily delay time increases with each year due to increases in population and vehicle mile traveled (VMT) in Reno. Total delay times also increase with increased railroad traffic levels. Meyer, Mohaddes Associates, Inc. estimates that total delay time is comprised of 90 percent idling time and 10 percent decelerating/accelerating time into and out of traffic queues at the railroad intersections.

[10] Meyer, Mohaddes Associates, Inc., communication, September 11, 1997.

3.2 Locomotive Emissions

Emissions from the locomotives of the freight trains and in the switchyards will contribute to the increased air basin emissions. The STB has recommended[11] that the locomotive fleet be distributed so that the areas needing greatest mitigation of NO_x receive the newer (and remanufactured), lower emitting locomotives. The STB's Recommendation reads:

> To mitigate expected emissions increases in those AQCRs listed in Table 4-2, SEA proposes that UP/SP institute EPA locomotive standards (currently in draft form) in a priority basis for locomotives that pass through these [most highly polluted] AQCRs.

The Reno air basin is a lower priority for these so it is assumed that Reno will receive the older, higher emitting locomotives for the first 10 years of the tighter locomotive emission standards. Thus the NO_x emissions from locomotives are expected to increase linearly with the number of trains through 2010.[12]

Remanufactured engines will come into service after about 2010 and will result in some reduction in NO_x and CO emissions. The control effect on NO_x emissions is estimated by EPA[13] for the national average fleet at a 39 percent decrease at year 2010. With the slower turnover in northwest Nevada, this improvement is expected to be seen by year 2015 in Truckee Meadows. The control of CO emissions in the proposed locomotive emission standards is secondary to NO_x and no effect on CO is defined. There is no certainty (and the STB proposes none) that with the new emission standards that there will be any significant decrease in CO emissions by year 2015. Thus, for the Truckee Meadows' locomotive emission estimates, CO emissions per unit of fuel burned, through year 2015, are assumed to be constant and equal to the 1995 unit emissions rates.

The AQMD prepared an emissions inventory for 1992 railroad use[14] in which they used the most recent EPA emission factors, calculation methods, and 1992 rail use statistics from Southern Pacific, Union Pacific, and AMTRAK (Appendix B.4 of that report). Average Southern Pacific rail

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[11] (STB Post-EA, Page 4-18) The rail segments to receive lower-emitting locomotives are prioritized in Table 4-3 and AQCR 148. The Truckee Meadows Basin is listed as a lower priority.

[12] The February 1997 EPA Environmental Fact Sheet (EPA 420-F-97-007) on "Proposed Emission Standards for Locomotives" describes proposed standards that are to take effect beginning in the year 2000. Locomotive engines manufactured and remanufactured after that date will meet lower emission standards. In that report the typical life-span for locomotives is listed as about 40 years with a remanufacture rate of 5 to 10 times in this life-span. This equates to remanufacture on the average of 4 to 8 years. Assuming the emission standards go into effect in the year 2000 and the remanufacture cycle time is lower than average because the Truckee Meadows is lower priority for receipt of cleaner engines, the current fleet emission factors would be expected to remain the same through at least year 2010.

[13] Ibid.

[14] Washoe County, Nevada, Ozone Non-Attainment Area 1993 Emission Inventory of Ozone Precursors, November 1995, AQMD, p. 4 - 22.

use for 1992 was 10.5 freight trains through Reno per day[15]. Emission estimates for the 1995 base year at 12.7 trains per day and the future years are ratioed from these actual use numbers.

TABLE 3.2
LOCOMOTIVE EMISSIONS IN TRUCKEE MEADOWS AIR BASIN

Emissions (tons/year)	Number of Trains	1992	1995	2000	2007	2015
CO	10.5	47*	47	--	--	--
	12.7	--	57	57	57	57
	24	--	--	107	107	107
	36	--	--	161	161	161
NO_x	10.5	363*	363	--	--	--
	12.7	--	439	439	439	268^
	24	--	--	829	829	506^
	36	--	--	1,244	1,244	759^

^ 39 percent control on NO_x emissions assumed in 2015
* AQMD emissions inventory
* CO Air Basin Emissions/CO County Emissions * NO_x County Emissions

Passenger trains can be neglected because they have a negligible contribution to the total emissions. Rail yard emissions are assumed to change linearly with freight train usage of the Reno tracks. For 12.7, 24, and 36 trains per day through Reno, the CO emissions will be 56.6, 107, and 160 tons per year, respectively. The incremental increase in CO emissions from 12.7 to 24 trains will be 50 tons per year, and from 12.7 to 34 trains will be 103 tons per year.

For NO_x, the method of calculation is the same as for CO, except that a 39 percent control reduction is assumed for year 2015, because of lower emission standards.

3.3 Vehicle Emissions

Vehicle emission factors for NO_x and CO are calculated using the Environmental Protection Agency's (EPA's) current mobile source emission factor calculation program, MOBILE5b. The CO emission factors are calculated based on the winter season (i.e., November, December, and January) input parameters (CO impacts are highest in wintertime), and NO_x emission factors are calculated based on the summer season (i.e., June, July, and August) input parameters (ozone impacts are highest in the summertime). MOBILE5b produces both idling emission factors and emission factors for user-specified vehicle speeds.

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[15] From SP 1992 operational statistics, Roseville CA, to Sparks track: 530,814 train miles / 139 miles = 3819 trains in 1992. 3819 / 365 days per year = 10.5 trains per day.

The model takes as input site-specific information on inspection and maintenance programs (Table 3.3), anti-tampering programs (Table 3.4), fleet mix, mileage accumulation data, oxygenated fuels programs (Table 3.5), ambient temperatures (Table 3.6), and gasoline vapor pressures. The site-specific data listed in the tables below were taken from the *1993 Emission Inventory of Carbon Monoxide*, November 1995 from Washoe County District Health Department. Based on the posted speed limit of 25 miles per hour, the average speed of travel is assumed to be 12.5 miles per hour during acceleration and deceleration into and out of the queue at the rail crossings. The remaining input values are assumed to be default values.

TABLE 3.3
INSPECTION AND MAINTENANCE PROGRAM - INPUT PARAMETERS

Start Year	1988
Pre-1981 Stringency (Failure) Rate	24%
First model year covered	1968
Last model year covered	1993
Waiver rate (pre-1981)	2%
Waiver rate (1981 and newer)	2%
Compliance rate	95%
Inspection type	Computerized decentralized
Inspection frequency	Annual
Vehicle type covered	LDGV – Yes LDGT1 – Yes LDGT2 – Yes HDGV – No
1981 & later MYR test type	2500 rpm/idle

TABLE 3.4
ANTI-TAMPERING PROGRAM - INPUT PARAMETERS

Start year	1988
First model year covered	1968
Last model year covered	1993
Vehicle types covered	LDGV, LDGT1, LDGT2
Type	Decentralized
Frequency	Annual
Compliance rate	95%
Air pump disablement	Yes
Catalyst removals	Yes
Fuel inlet restrictor	Yes
Tailpipe lead deposit test	No
EGR disablement	Yes
Evaporative system disablement	Yes
PCV disablement	Yes
Missing gas cap	Yes

TABLE 3.5
OXYGENATED FUELS - INPUT PARAMETERS

Oxygenate	Market Share	Oxygen Content
Methyl Tertiary Butyl Ether	88.0%	2.7%
Ethyl Alcohol	12.0%	3.5%

TABLE 3.6
RENO TEMPERATURE AND RVP - INPUT PARAMETERS[16]

	Maximum	Minimum	Average	RVP
January	35.6	15.8	25.7	15.0
June	77.4	46.3	61.9	7.8
July	86.1	51.9	69.0	7.8
August	87.4	52.5	70.0	7.8
November	54.2	26.6	40.4	13.5
December	47.5	25.5	36.5	15.0

The resulting idling emission factors (g/hour) are multiplied by the total daily idling time, which is approximately 90 percent of the total daily delay time. The resulting operational emission factors (at 12.5 mph) are multiplied by the daily distance traveled during acceleration and deceleration (10 percent of the total delay time multiplied by the average speed). The sum of these emission rates is the total vehicular emission rate (lb/day). Because the daily emission rate is representative of a typical weekday, approximation of annual emissions is accomplished by multiplying by 260 days per year.[17] Vehicle emissions for each of the 10 train traffic/planning year scenarios are calculated as the difference between train-impeded vehicle emissions and free-flowing (25 mph) vehicle emissions over the same road distances. The MOBILE5b model outputs and emission spreadsheets are attached as the appendix.

3.4 Emissions Summary by Train Traffic Scenario

3.4.1 Carbon Monoxide

As discussed in Section 3.2, locomotive emissions are assumed to increase linearly with the number of trains traveling through Reno daily. Emissions of carbon monoxide from locomotives and vehicles are summarized below for each year of analysis and each train traffic scenario.

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[16] Note that for the purposes of this analysis, June, July, and August are chosen to represent the summer season, and November, December, and January are chosen to represent the winter season.

[17] Meyer, Mohaddes Associates, Inc., communication, September 11, 1997.

TABLE 3.7
CO EMISSIONS FROM LOCOMOTIVES AND VEHICLES
(tons per year)

	Trains/Day	1995	2000	2007	2015
Locomotives	12.7	57	57	57	57
	24	--	107	107	107
	36	--	161	161	161
Vehicles	12.7	22	22	20	23
	24	--	40	38	44
	36	--	62	56	65
Total	12.7	79	79	77	80
	24	--	147	145	151
	36	--	223	217	226

The net emissions increases over the baseline year are shown in Table 3.8 below. The baseline scenario is considered to be the 1995, 12.7 trains per day case. For the no-merger (12.7 trains per day) scenarios, the emissions remain approximately the same with time because the improved emissions factors (from the improved vehicle fleet) compensate for the increased delay time. The 24-train-per-day scenario emission increase is small, at less than 100 tons per year for all years. For the 36-trains-per-day scenario the emissions are over 100 tons per year.

TABLE 3.8
NET CO EMISSIONS INCREASE
(tons per year)

Trains/Day	1995	2000	2007	2015
12.7	0	0	-2	1
24	--	68	66	72
36	--	144	138	147

3.4.2 Nitrogen Oxides

Emissions of NO_x in Truckee Meadows are also expected to increase as a result of the increased railroad traffic through increases in emissions directly from the locomotives and increases in emissions from additional idling cars at the railroad tracks. As discussed in Section 3.3, locomotive NO_x emissions are assumed to increase linearly with the number of freight trains per day traveling through the air basin. The emissions increase from vehicles is a balance between the increased vehicle delay time with the passage of time and the emission factors based on a

changing fleet to lower-emitting vehicles within the passage of time. Emissions of nitrogen oxides from locomotives and vehicles are summarized in Table 3.9 for each year of analysis and each train traffic scenario.

TABLE 3.9
NO_x EMISSIONS FROM LOCOMOTIVES AND VEHICLES
(tons per year)

	Trains/Day	1995	2000	2007	2015
Locomotives	12.7	439	439	439	268*
	24	--	829	829	506*
	36	--	1,244	1,244	759*
Vehicles	12.7	1	1	1	1
	24	--	1	1	2
	36	--	1	1	1
Total	12.7	440	440	440	269
	24	--	830	830	508
	36	--	1,245	1,245	760

*NO_x emissions from locomotives are calculated assuming a control efficiency of 39 percent in 2015.

Vehicular emissions are negligible (less than 1 percent) relative to the emissions from locomotives. The overall net emissions increases over 1995, the baseline year, are shown in Table 3.10 below. The 24-train-per-day scenario results in a substantial increase in NO_x of about 400 tons per year for the years 2000 and 2007. The net increase is much smaller in 2015 because of the anticipated requirements for lower-emitting locomotives.

TABLE 3.10
NET NO_x EMISSIONS INCREASE
(tons per year)

	Trains/Day	1995	2000	2007	2015
Net	12.7	0	0	0	-171
	24	--	390	390	68
	36	--	805	805	320

3.5 Truckee Meadows Inventory and the Net Change Resulting from the Merger

The AQMD has developed an ozone air basin maintenance plan[18] addressing the ozone precursor emissions for 1993, 1995, and the year 2010 for Washoe County. The 1993 inventories for NO_x and CO from this plan (Table 3) are provided in Table 3.11. The future year estimates are developed from Table 5 of the plan and ratioed from the daily high-season values.[19] This is an approximate inventory because the CO and NO_x emissions on the high-season ozone day are not the same proportion of the CO and NO_x annual average for all source categories. This is generally a good assumption, except for a few source categories such as residential woodburning. There are no CO and NO_x emissions from residential woodburning on the high ozone days, but this source category contributes (less than 10 percent) to the annual inventory.

TABLE 3.11
PROJECTION OF ANNUAL WASHOE COUNTY EMISSIONS
(tons per year)

Year	CO	NO_x
1993	95,800	13,900*
1995	70,221	13,100
2010	54,000	10,800

* Note that with proper addition, the annual NO_x total in Table 3 is 13, 910 instead of 13,810.

The associated emissions for Truckee Meadows are estimated from these county emissions and the 1993 Truckee Meadows CO emissions provided in the 1993 Truckee Meadows Emission Inventory.[20] The ratio of annual CO emissions is 58,871 tons per year (Table 1-2) for Truckee Meadows to 95,767 tons per year (Table 3 of the plan) for Washoe County, or 0.615. The resulting Truckee Meadows emission inventory provided in Table 3.12 assumes that this ratio is constant through the year 2010, and is representative for both CO and NO_x. This assumption is equivalent to the mix of sources (contribution of each source category to the total) remaining the same through year 2010. It is also equivalent to the mix of sources being the same for Washoe County and Truckee Meadows, which is approximately true.

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[18] "Washoe County, Nevada, Redesignation Request and Maintenance Plan for the National Ozone Standard," November 1996, Washoe County District Health Department Air Quality Management Division.

[19] Table 5 contains errors in the emissions for 1993 as seen from comparison with Table 3. Regarding the daily NO_x and CO emissions, the On-Road Mobile emissions should be 24.39 and 170.7 tons per day, respectively. The totals should be 41.58 and 269.1 tons per day, respectively. This was verified through a 10/1/97 phone communication with the AQMD.

[20] From Table 3 the high-season day inventory is 1/334 and 1/356 of the annual values for NO_x and CO, respectively. Note that Table 5 contains errors in translation from Table 3 for the 1993 inventory.

TABLE 3.12
PROJECTION OF ANNUAL TRUCKEE MEADOWS EMISSIONS
(tons per year)

Year	CO	NO_x
1993	58,900	8,500
1995	43,200	8,000
2010	33,200	6,600

It is evident from this Truckee Meadows' inventory that the AQMD anticipates air basin-wide decreases in CO and NO_x over the next 10 to 15 years.

The increase in CO resulting from the merger will be less than 1 percent of the total Truckee Meadows' inventory and is unlikely to have measurable impact on the concentration. It is also evident that the increase in NO_x emissions from the year 2000 and 2007, 24-train scenarios is approximately 5 percent of the 1995 Truckee Meadows' inventory. If a linear decrease in air basin inventory is assumed between 1995 and 2010, the inventory would be decreasing approximately 100 tons per year (about 1.3 percent of the inventory) and the year 2000, 24-train scenario would have greater than a 5 percent increase to the year 2000 emission inventory. The 36-train scenario would have greater than a 10 percent impact on the year 2000 Truckee Meadows' inventory. Both of these increases could have a significant impact on the ozone concentrations in Truckee Meadows that would not otherwise occur without the merger.

4.0 EXISTING EMISSION CONTROL PLANS AND EFFECTS OF THE MERGER ON THESE PLANS

The Air Quality Management District has the continuing responsibility for protecting the air quality of Truckee Meadows and Washoe County. This is accomplished, in part, by tracking the ambient air quality with monitoring stations and, also in part, by developing and enforcing limits on air emissions in Washoe County. With regard to the measured levels of air quality, there are NAAQS in place which define levels of air quality for specific pollutants. These levels are considered to be health-based thresholds. The CO and O_3 NAAQS are listed in Table 4.1, and exceedances of these standards have been measured in the Truckee Meadows Basin in the past eight years.

TABLE 4.1
AMBIENT AIR QUALITY STANDARDS

CO	1-hour standard	35 ppm
CO	8-hour standard	9 ppm
Ozone	1-hour standard	120 ppb

These short-term standards are not to be exceeded more than once per year.

The AQMD is charged with the responsibility of maintaining ambient concentrations within the health-based NAAQS by controlling the emissions of air pollutants to a sufficient degree. To meet this responsibility, especially with regard to the pollutants for which the areas are designated nonattainment, AQMD has developed emission control plans to bring the areas into attainment of these ambient standards. In developing these plans, the AQMD has evaluated the current emission trends which include current levels of railroad traffic and associated vehicle congestion and normal growth. Incremental increases in locomotive and vehicle emissions due to a railroad merger are not assumed.

To control ambient concentrations of ozone, the plan focuses on emissions of volatile organic compounds (VOCs). Measures identified to control VOCs include:

- Phase II vapor recovery at gas pumps,
- oxygenated fuels program for automobiles during the winter months of October through February,
- added controls, defined as reasonable available control technology (RACT), on existing stationary sources,
- emission tracking requirements on small sources, and
- Inspection and Maintenance (I & M) program for motor vehicles.

The AQMD's plan to control emissions of [illegible]nclude the following measures:

- voluntary restriction on fireplace and wood-stove use under certain conditions,
- mandatory ban on the use of fireplaces and wood-stoves when ambient standards are exceeded,
- oxygenated fuels program for automobiles during the winter months of November through February, and
- added controls (RACT) on existing stationary sources.

The control measures included in the AQMD's air quality plans carry a financial and lifestyle cost to the residents and businesses of Truckee Meadows. If the emission projections in these plans do not correctly account for future emission sources and if the revised emission projections show that emission budgets will be incrementally higher due to the railroad merger, additional emission controls (and associated costs) may be necessary to bring the area into attainment of the NAAQS.

5.0 CLEAN AIR ACT REQUIREMENTS ON THE STB AND RAILROAD ASSOCIATED WITH THE MERGER PLAN EMISSION INCREASES IN THE NONATTAINMENT AREA

The non-attainment status of Washoe County (ozone) and the Truckee Meadows area (PM_{10} and CO) heightens the concern for changes in total emissions in the air basin and in ambient pollutant concentrations in Truckee Meadows. The applicable State Implementation Plans (SIP) for the air quality planning areas and the Regional Transportation Improvement Program (TIP) for the Washoe County transportation planning area establish the strong link between emissions from transportation sources and ambient concentrations of air pollutants that have historically exceeded the health-based NAAQS. Regulatory agencies with approval authority over proposed projects that have the potential to add significant quantities of non-attainment pollutants to the air basin and/or the potential to inhibit the area's progress towards attainment of the NAAQS have the legal responsibility to ensure that each project will conform with the applicable SIP. This process is called a conformity analysis and is regulated by the Federal Conformity Rule, 40 CFR 93.150 - 160. In the case of the approved UP/SP merger, the STB made a decision not to conduct a formal conformity analysis. For the reasons stated below, this decision has been found to be inconsistent with a federal agency's legal responsibilities under the conformity rule.

5.1 Applicability of Conformity Requirements

The STB bases its assertion that general conformity does not apply to the proposed merger on the failure of emission increases due to the proposed UP/SP merger to meet the definition of "Emissions that a Federal Agency has a continuing program responsibility for." (40 CFR 51.852) This conclusion is not accurate given the STB's demonstrated role in the ongoing operations of railroad operations.

For example, in the Final Order, the STB not only imposes a number of mitigation requirements on the proposed merger (over which, presumably, the STB would have enforcement/implementation powers), but also specifically limits additional train traffic due to the merger of two (2) additional UP/SP freight trains per day. (A requirement for UP/SP to document compliance with this limitation via monthly filing of station passing reports is also included.) The inclusion in the Final Order of these requirements demonstrates the STB's continuing program responsibility to control emission sources.

The STB also asserts that it functionally lacks control over railroad traffic on a daily basis (i.e., the railroad companies can run trains through Reno without limitation). This assertion is irrelevant in terms of the STB's role in performing an adequate air quality analysis and conformity

assessment. Railroad companies respond to the demands of interstate commerce to establish an appropriate level of service. The current level of railroad traffic is a reflection of these market forces. The STB's decision to allow the merger does not alter these market forces, rather, it expressly allows the railroad companies to reconfigure their means of meeting the marketplace demands. The STB's decision specifically provides for a net increase in railroad traffic through Reno which results in a net increase in emissions. This direct correlation between the STB's decision on the merger and increases in locomotive and vehicle traffic in Truckee Meadows is another example of the STB's control over air quality emissions in the Truckee Meadows basin.

Due to evidence that the STB does have ongoing program responsibility for emission sources associated with the UP/SP merger and due to the fact that the STB's decision to approve the UP/SP merger will have a direct effect on increases in emissions of nonattainment pollutants in the Washoe County and Truckee Meadows nonattainment areas, the conformity rules are applicable to the UP/SP merger.

5.2 Conformity with the Purpose of the SIP

Assessing conformity with applicable SIP requirements is a matter of demonstrating that proposed activities that require approval from a federal agency conform with the *purpose* of the SIP. In general, the purpose of the SIP is to achieve "reasonable further progress" toward attainment of the NAAQS and attainment of the NAAQS by a date-certain as defined in the regulations. This is also the criterion by which EPA typically assesses whether a submitted SIP can be approved.

A common means of demonstrating reasonable further progress toward attainment of the NAAQS is through an emissions budget analysis. There are typically two facets to an emissions budget analysis, both of which must be met. First, a demonstration that future emissions budgets (that include the control measures committed to in the SIP and TIP, the so called "action" or "build" scenarios) are less than or equal to the emission budget for the design year. (The design year can be the year during which exceedances of the NAAQS were the highest (in nonattainment areas) or it can be the first year during which the NAAQS was not exceeded (maintenance areas or nonattainment areas being petitioned for redesignation to attainment.) Second, a demonstration that the emission budget for the action scenario is less than the emission budget for the no-action scenario (the scenario in which the measures committed to in the TIP are not implemented).

Due to the continual changeover of the automobile fleet to newer, cleaner-burning vehicles, it is unlikely that any future year build emissions budgets will be greater than the design year (1990) emissions budget. Therefore, it is unlikely that the first facet of an emissions budget analysis will

raise conformity issues in Washoe County/Truckee Meadows regardless of the effect of the UP/SP merger on air basin emissions.

However, the UP/SP merger does raise conformity issues with respect to the second facet of an emissions budget analysis (comparison of build and no-build scenarios). According to the Draft 1997 TIP, the CO emission budget for the 2002 and the NO_x emission budgets for the 2002, 2007, and 2015 action and no-action scenarios are virtually equivalent. This suggests that small emission increases estimated for the build scenario would result in the build scenario emissions budget exceeding the no-build emissions budget. This would result in a failure of the TIP to meet the second conformity test. This is the case for the UP/SP merger, as described below.

To appropriately assess the build and no-build scenarios with respect to the approved UP/SP merger, the emissions budget analyses would be based on the following assumptions:

- Build scenario: 1) an increase in emissions due to increased railroad traffic (as a result of the UP/SP merger), 2) an increase in emissions due to increased automobile deceleration/idle/acceleration times associated with increased railroad gate closures, and 3) elimination of the transportation project (committed to in the Draft 1997 TIP) to depress the track at 12 intersections in downtown Reno. This scenario would be consistent with the STB's projection of increased railroad traffic and with the STB's mitigation measures which do not include the project to depress the track. The future emissions estimates presented in Section 3.4 that represent scenarios 24 trains in 2000, 24 trains in 2007, 24 trains in 2015, 36 trains in 2000, 36 trains in 2007, and 36 trains in 2015 are based on these "build" assumptions.

- No-build scenario: 1) no increase in emissions due to increased railroad traffic (i.e., assume the merger doesn't occur or has no impact on railroad traffic), 2) no increase in emissions due to increased automobile deceleration/idle/accelerations times as there would be no increase in railroad gate closures, and 3) elimination of the transportation project to depress the track at 12 intersections. This scenario would be consistent with continuation of the status quo, accounting for projected growth but no other significant changes in the transportation network. The future emissions estimates that represent scenarios 12.7 trains in 2000, 2007, and 2015 are based on these "no-build" assumptions.

The emissions calculations prepared for this analysis demonstrate that the emissions budget for all future build scenarios will exceed future no-build scenarios. Tables 5.1 and 5.2 show a direct comparison of CO and NO_x emissions, respectively, for build and no-build scenarios for future years. Of the six future build scenarios analyzed, the build scenarios show a CO emissions increase over the no-build scenarios in the range of 69 to 149 tons per year. For NO_x the build

scenarios show a NO_x emissions increase over the no-build scenarios in the range of 239 to 806 tons per year. This comparison assumes that all other aspects of the future build and no-build scenarios remain the same. These estimates of emission increases suggest that the proposed railroad merger does not conform with the purpose of the SIP.

TABLE 5.1
BUILD AND NO-BUILD CO EMISSIONS COMPARISONS
(tons per year)

Planning Year	Train Traffic Scenarios Being Compared: Build	Train Traffic Scenarios Being Compared: No-Build	Build Scenario Emissions	No-Build Scenario Emissions	Net Change
2000	24	12.7	147	79	68
	36	12.7	223	79	144
2007	24	12.7	145	77	68
	36	12.7	217	77	140
2015	24	12.7	151	80	71
	36	12.7	226	80	146

TABLE 5.2
BUILD AND NO-BUILD NO_x EMISSION COMPARISONS
(tons per year)

Planning Year	Train Traffic Scenarios Being Compared: Build	Train Traffic Scenarios Being Compared: No-Build	Build Scenario Emissions	No-Build Scenario Emissions	Net Change
2000	24	12.7	830	440	390
	36	12.7	1,245	440	805
2007	24	12.7	830	440	390
	36	12.7	1,245	440	805
2015	24	12.7	508	269	239
	36	12.7	760	269	491

5.3 Consistency with the Current TIP

The Draft 1997 TIP relies heavily on the implementation of three categories of transportation control measures (TCM) for its transportation model, its estimation of emissions, and its determination of conformity with the applicable SIPS. These categories are:

- traffic flow improvements,
- intersection geometric improvements, and
- traffic signal coordination.

All three of these TCM categories serve to improve the level of service offered by the road network and to enhance the flow of traffic (minimizing deceleration/idle/acceleration cycles and congestion).

The importance of investigating the STB's decision on the UP/SP merger in terms of consistency with the TIP lies in the fact that the projects included in the TIP form the basis for the transportation model and the emission budgets. The emission budgets are used to demonstrate conformity with the SIP. If projects in the TIP are not implemented then it is possible that the results of the transportation model and emission budgets would change. This could create difficulty in demonstrating conformity with the SIP.

The increase in railroad traffic associated with the UP/SP merger (without roadway improvements to depress the railway) would to some degree directly offset the traffic benefits and emissions improvements associated with these TIP measures. Federal funding is tied to these TCMs and a demonstration that these measures may not be as effective as expected (due to the UP/SP merger) and could jeopardize future federal funding of these programs.

Additionally, the Draft 1997 TIP specifically includes depressing the UP railway at 12 intersections from Keystone to Sutro Street. Funding for this TIP measures is through UP ($119.572M), local sales tax increases ($74.135M), and federal funds (discretionary ($7.972M), FRA ($7.972M), and EPA ($7.972M)).[21] If the UP/SP merger results in increases in railroad traffic without improvements to the at-grade crossings, then the Draft 1997 TIP (and, potentially, its transportation modeling and emissions budgets) will have to be revised to reflect the dropping of this TIP element.

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[21] Draft Regional Transportation Improvement Program, Regional Transportation Commission of Washoe County, August 14, 1997, p. 48.

6.0 NEPA REQUIREMENTS ON THE STB AND RAILROAD ASSOCIATED WITH THE MERGER PLAN

The merger will result in a net increase in emissions and ambient concentrations of regulated pollutants over current (status quo) levels. This report presents data that suggest that the net increase in regulated pollutants (in the case of CO and NO_x) will exceed the de minimis thresholds found in the federal conformity rule (100 tons per year of CO or NO_x) and will produce a future emissions budget that will not allow for the Transportation Improvement Plan to be shown to conform to the Nevada State Implementation Plans (SIPs). Either of these facts can be used to argue the significance of the air quality impacts due to the approved merger and the necessity for a comprehensive Environmental Impact Statement (EIS). In addition, Section 3.5. demonstrates that the railroad merger will result in immediate annual NO_x emissions increases in the Truckee Meadows air basin that more than offset projected annual decreases in NO_x emissions.

Further, two of the STB's positions regarding the adequacy of its air quality assessment are not valid to rule out the necessity of an EIS:

- The fact that the STB's rules (49 CFR 1105.6.b) typically only require an Environmental Assessment for actions such as mergers does not directly speak to the air emissions increases and ambient air quality impacts associated with the approved UP/SP merger in the Reno area. Evidence that the approved merger could significantly affect the quality of the human environment overrides the STB's rules on this matter.

- The mitigation measures specifically required for Reno (both during the mitigation study and beyond) do not mitigate emissions to the point where there will be no significant environmental effects. The revised technical analysis demonstrates that the status quo environment is not being preserved.

7.0 SUMMARY

- Because the dispersion characteristics of Truckee Meadows are poor, its air quality is particularly sensitive to increases in emissions.

- The area is designated non-attainment for carbon monoxide, ozone, and particulates.

- Emissions of CO during the mid-morning hours of winter days are of greatest concern for CO sources. Emissions of NO_x during the summer days are of greatest concern for NO_x sources.

- Under certain train-use scenarios there will be increases of more than 100 tons per year of CO. This represents less than 1 percent of the Truckee Meadows' inventory.

- Under the 24-train scenarios NO_x emissions could increase approximately 400 tons per year which is about 5 percent of the Truckee Meadows air basin inventory. Under the 36-train scenario the emissions could increase NO_x emissions in Truckee Meadows 800 tons per year, which is 10 percent of the inventory. These are significant increases.

- These increases may trigger a rewrite of the Truckee Meadows (and Washoe County) control plan for carbon monoxide and ozone. The plan may include additional control measures which carry a financial and lifestyle cost for the resident and business communities.

- The federal conformity rule requirements apply to the proposed merger due to the STB's ongoing responsibility for emission increases that can be directly attributed to the UP/SP merger.

- The federal conformity rule requirements are applicable to the UP/SP merger based on the fact that increases in direct and indirect emissions of CO and NO_x due to the merger exceed the de minimis levels in the conformity rule.

- At a minimum, the STB is compelled to formally assess the conformity of the merger to the applicable SIP requirements. The technical analyses contained herein suggest that the merger does not conform with the purpose of the SIP.

- The NEPA requirements indicate a need to analyze air quality impacts due to the proposed merger in the comprehensive Environmental Impact Statement process.

GLOSSARY

Air drainage	Air flowing down a V because it is colder than surrounding air
Ambient	Air conditions to which the public is exposed outside of buildings
AQMD	Washoe County District Health Department, Air Quality Management Division
At-grade intersection	Road/train track intersection at which the railroad crossing is the same level as the roadway
Attainment	Description of an area that meets the National Ambient Air Quality Standards (NAAQS)
Baseline year	The year serving as the basis for measurement or calculation
Build-scenario	Scenario incorporating any proposed action alternatives
CAA	Federal Clean Air Act
CO	Carbon monoxide
De minimis threshold	Level of emissions below which additional analysis is not required or useful
Dispersion	Bulk mixing caused by turbulent atmospheric motion
EIS	Environmental Impact Statement
Federal Conformity Rule	The federal rule that requires all federal actions to be analyzed to determine that the action conforms with all applicable requirements in the applicable State Implementation Plan
I & M	Vehicle Inspection and Maintenance Program
Inversion	A vertical region in which there is an increase of temperature with height
Mitigation	Measures designed and implemented to alleviate an adverse environmental impact
MOBILE5b	EPA's mobile source emission factor estimation software
NAAQS	National Ambient Air Quality Standards which are health-based ambient concentration limits
NAMS	National Air Monitoring Stations Network
NEPA	National Environmental Policy Act
NO_x	Nitrogen Oxides
No-build scenario	Scenario in which no proposed action items are implemented or constructed
Nonattainment	Description of an area in which the National Ambient Air Quality Standards (NAAQS) are or have historically been exceeded.

O_3	Ozone
Planning year	The baseline year upon which future planning decisions are made
PM_{10}	Particulate matter less than 10 microns in diameter
Precursor	An intermediate chemical compound that will undergo a chemical reaction to form a different compound
RACT	Reasonably Available Control Technology
SIP	State Implementation Plans
SP	Southern Pacific
TCM	Transportation Control Measures
Temporal	Relating to time
TIP	Regional Transportation Improvement Program
Topographic	Describing land surface characteristics
UP	Union Pacific
U.S. EPA	United States Environmental Protection Agency
VOCs	Volatile organic compounds
VMT	Vehicle Miles Traveled
Wind rose	A diagram that shows, for a given location and time period, the intensity and frequency of winds from each of the sixteen ordinal directions

APPENDIX

Calculation of Net Increase in NO_x Emissions in the Truckee Meadows from the Railroad Merger

NOx Emission Factors - All Vehicles

	Running Emissions (12.5 mph) - (g/VMT)				Idling Emissions (g/hour)				Running Emissions (25 mph) - (g/VMT)			
	1995	2000	2007	2015	1995	2000	2007	2015	1995	2000	2007	2015
Jun	2.88	2.54	2.28	2.21	10.19	9.03	8.11	7.88	2.63	2.31	2.08	2.01
Jul	2.77	2.44	2.21	2.15	9.79	8.67	7.87	7.66	2.53	2.22	2.01	1.96
Aug	2.76	2.43	2.20	2.14	9.76	8.64	7.84	7.64	2.52	2.21	2.00	1.95
Average	**2.80**	**2.47**	**2.23**	**2.17**	**9.91**	**8.78**	**7.94**	**7.73**	**2.56**	**2.25**	**2.03**	**1.97**

Period	Daily
Average speed during accel/decel	12.5 mph
Locomotive CO Emission Factor - Air Basin	4.46 tons/year / trains/day
Locomotive CO Emission Factor - Washoe County	5.78 tons/year / trains/day
Locomotive NOx Emission Factor - Air Basin	**34.56** tons/year / trains/day
Locomotive NOx Emission Factor - Washoe County	44.79 tons/year / trains/day
Assumed control for NOx emissions from locomotives	39%

NOx Emissions

		1995 12.7	1995 24	1995 36	2000 12.7	2000 24	2000 36	2007 12.7	2007 24	2007 36	2015 12.7	2015 24	2015 36
Vehicular Emissions													
Total Daily Delay Time (hours)		188	359	539	251	473	714	262	495	742	310	587	880
Percent Idle Time		90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Total Idle Time (hours)		169	323	485	226	426	643	236	446	668	279	528	792
Total Accel/Decel Time (hours)		19	36	54	25	47	71	26	49	74	31	59	88
Idling NOx Emissions	lb/day	4	7	11	4	8	12	4	8	12	5	9	13
	tons/yr	1	1	1	1	1	2	1	1	2	1	1	2
Accel/Decel Emissions	lb/day	1	3	4	2	3	5	2	3	5	2	4	5
	tons/yr	0	0	1	0	0	1	0	0	1	0	1	1
Vehicular Emissions	lb/day	5	10	15	6	11	17	6	11	17	7	13	18
	tons/yr	1	1	2	1	1	2	1	1	2	1	2	2
Emissions Decrease*	lb/day	1	3	4	2	3	4	1	3	4	2	3	5
	tons/yr	0	0	1	0	0	1	0	0	1	0	0	1
Net vehicular emissions change	lb/day	4	7	11	4	8	13	5	8	13	5	10	13
	tons/yr	1	1	1	1	1	1	1	1	1	1	2	1
Locomotive Emissions*	lb/day	3,377	6,377	9,569	3,377	6,377	9,569	3,377	6,377	9,569	2,062	3,892	5,838
	tons/yr	439	829	1,244	439	829	1,244	439	829	1,244	268	506	759
Total	lb/day	3,381	6,384	9,580	3,381	6,385	9,582	3,382	6,385	9,582	2,067	3,902	5,851
	tons/yr	440	830	1,245	440	830	1,245	440	830	1,245	269	508	760
Net Emissions Increase **	lb/day	0	3,003	6,199	0	3,004	6,201	1	3,004	6,201	-1,314	521	2,470
	tons/yr	0	390	805	0	390	805	0	390	805	-171	68	320

*Emissions decrease due to vehicles traveling the same distance across intersection at the unimpeded speed of 25 miles/hour

*Locomotive emissions are assumed to be controlled by 39% in 2015

**Net emissions increase is calculated relative to emissions from the 1995, 12.7 trains scenario (i.e., emissions expected for scenario X minus emissions expected for 1995, 12.7 trains scenario)

Calculation of Net Increase in CO Emissions in the Truckee Meadows from the Railroad Merger

CO Emission Factors - All Vehicles

	Running Emissions (12.5 mph) - (g/VMT)				Idling Emissions (g/hour)				Running Emissions (25 mph) - (g/VMT)			
	1995	2000	2007	2015	1995	2000	2007	2015	1995	2000	2007	2015
Jan	51.85	40.44	37.16	37.23	493.96	349.79	300.06	295.70	29.89	23.44	21.57	21.62
Nov	42.28	33.49	31.39	31.38	399.69	288.02	252.25	247.75	24.29	19.34	18.17	18.17
Dec	44.28	35.07	32.86	32.84	419.49	302.19	264.44	259.70	25.46	20.26	19.03	19.03
Average	**46.14**	**36.33**	**33.80**	**33.82**	**437.71**	**313.33**	**272.25**	**267.72**	**26.55**	**21.01**	**19.59**	**19.61**

Period	Daily
Average speed during accel/decel	12.5 mph
Locomotive Emission Factor	4.46 tons/year / trains/day

CO Emissions

		1995	1995	1995	2000	2000	2000	2007	2007	2007	2015	2015	2015
		12.7	24	36	12.7	24	36	12.7	24	36	12.7	24	36
Vehicular Emissions													
Total Daily Delay Time (hours)		188	359	539	251	473	714	262	495	742	310	587	880
Percent Idle Time		90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Total Idle Time (hours)		169	323	485	226	426	643	236	446	668	279	528	792
Total Accel/Decel Time (hours)		19	36	54	25	47	71	26	49	74	31	59	88
Idling CO Emissions	lb/day	163	312	468	156	294	444	142	268	401	165	312	467
	tons/yr	21	41	61	20	38	58	18	35	52	21	41	61
Accel/Decel Emissions	lb/day	24	46	69	25	47	71	24	46	69	29	55	82
	tons/yr	3	6	9	3	6	9	3	6	9	4	7	11
Vehicular Emissions	lb/day	187	358	537	181	341	515	166	314	470	194	367	549
	tons/yr	24	47	70	24	44	67	22	41	61	25	48	71
Emissions Decrease[+]	lb/day	14	26	40	14	27	41	14	26	40	17	32	48
	tons/yr	2	3	5	2	4	5	2	3	5	2	4	6
Net vehicular emissions change	lb/day	173	332	497	167	314	474	152	288	430	177	335	501
	tons/yr	22	44	65	22	40	62	20	38	56	23	44	65
Locomotive Emissions	lb/day	438	823	1,238	438	823	1,238	438	823	1,238	438	823	1,238
	tons/yr	57	107	161	57	107	161	57	107	161	57	107	161
Total	lb/day	611	1,155	1,735	605	1,137	1,712	590	1,111	1,668	615	1,158	1,739
	tons/yr	79	151	226	79	147	223	77	145	217	80	151	226
Net Emissions Increase *	lb/day	0	544	1,124	-6	526	1,101	-21	500	1,057	4	547	1,128
	tons/yr	0	72	147	0	68	144	-2	66	138	1	72	147

+Emissions decrease due to vehicles traveling the same distance across intersection at the unimpeded speed of 25 miles/hour.

*Net emissions increase is calculated relative to emissions from the 1995, 12.7 trains scenario (i.e., emissions expected for scenario X minus emissions expected for 1995, 12.7 trains scenario)

```
MOBINE5B INPUT - 12.5 MPH

1          PROMPT
 UP/SP Project - 12.5 MPH
1          TAMFLG - Default tampering rates.
1          SPDFLG - One average speed for all vehicle types.
1          VMFLAG - Use Mobile5 VMT mix.
1          MYMRFG - Use MOBILE5 values for mileage accumulation and registration distributions.
1          NEWFLG - Use MOBILE5 basic exhaust emission rates and Evap. Test procedure
2          IMFLAG - One user specified program.
1          ALHFLG - No corrections for A/C useage, load, trailers, humidity.
2          ATPFLG - User specifies ATP.
5          RLFLAG - No refueling emission factors calculated.
1          LOCFLG - LAP record will appear once for each scenario.
2          TEMFLG - Input value of ambient temperature used to correct emission factors for temperature effects.
3          OUTFMT - 112 column descriptive
4          PRTFLG - Print exhaust HC, CO, and NOx results.
2          IDLFLG - Idle emission factors calculated and printed.
3          NMHFLG - Calculate emissions for volatile organic hydrocarbons.
3          HCFLAG - Print sum (excludes refueling) and component; evap in gms.
88 24 68 93 02 02  95 211 2221 2111                    I/M - Basic I/M
88 68 93 2221 21 095. 22212222                         ATP - ATP program
2 95 12.5 25.7 20.6 27.3 20.6  1                       Scenario description record
Jan UP/95.           16.  36. 15.0 15.0 92 2 1 1 1     Local Area Parameter record
.88  .12  .027 .035 1                                  Oxygenated fuels descriptive record.
2 95 12.5 34.3 20.6 27.3 20.6  1                       Scenario description record
Feb UP/95.           26.  43. 15.0 15.0 92 1 1 1 1     Local Area Parameter record
2 95 12.5 48.5 20.6 27.3 20.6  1                       Scenario description record
Mar UP/95.           36.  61. 13.5 13.5 92 1 1 1 1     Local Area Parameter record
2 95 12.5 48.7 20.6 27.3 20.6  1                       Scenario description record
Apr UP/95.           35.  63. 13.5 13.5 92 1 1 1 1     Local Area Parameter record
2 95 12.5 58.4 20.6 27.3 20.6  1                       Scenario description record
May UP/95.           44.  73.  9.0  9.0 92 1 1 1 1     Local Area Parameter record
2 95 12.5 61.9 20.6 27.3 20.6  1                       Scenario description record
Jun UP/95.           46.  77.  7.8  7.8 92 1 1 1 1     Local Area Parameter record
2 95 12.5 69.0 20.6 27.3 20.6  7                       Scenario description record
Jul UP/95.           52.  86.  7.8  7.8 92 1 1 1 1     Local Area Parameter record
2 95 12.5 70.0 20.6 27.3 20.6  7                       Scenario description record
Aug UP/95.           53.  87.  7.8  7.8 92 1 1 1 1     Local Area Parameter record
2 95 12.5 65.3 20.6 27.3 20.6  7                       Scenario description record
Sep UP/95.           47.  84.  7.8  7.8 92 1 1 1 1     Local Area Parameter record
2 95 12.5 54.9 20.6 27.3 20.6  7                       Scenario description record
Oct UP/95.           41.  69. 11.5 11.5 92 1 1 1 1     Local Area Parameter record
2 95 12.5 40.4 20.6 27.3 20.6  7                       Scenario description record
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Nov UP/95.          27.  54. 13.5 13.5 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 95 12.5 36.5 20.6 27.3 20.6  7                     Scenario description record
Dec UP/95.          26.  48. 15.0 15.0 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 00 12.5 25.7 20.6 27.3 20.6  1                     Scenario description record
Jan UP/00.          16.  36. 15.0 15.0 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 00 12.5 34.3 20.6 27.3 20.6  1                     Scenario description record
Feb UP/00.          26.  43. 15.0 15.0 92 1 1 1 1    Local Area Parameter record
2 00 12.5 48.5 20.6 27.3 20.6  1                     Scenario description record
Mar UP/00.          36.  61. 13.5 13.5 92 1 1 1 1    Local Area Parameter record
2 00 12.5 48.7 20.6 27.3 20.6  1                     Scenario description record
Apr UP/00.          35.  63. 13.5 13.5 92 1 1 1 1    Local Area Parameter record
2 00 12.5 58.4 20.6 27.3 20.6  1                     Scenario description record
May UP/00.          44.  73.  9.0  9.0 92 1 1 1 1    Local Area Parameter record
2 00 12.5 61.9 20.6 27.3 20.6  1                     Scenario description record
Jun UP/00.          46.  77.  7.8  7.8 92 1 1 1 1    Local Area Parameter record
2 00 12.5 69.0 20.6 27.3 20.6  7                     Scenario description record
Jul UP/00.          52.  86.  7.8  7.8 92 1 1 1 1    Local Area Parameter record
2 00 12.5 70.0 20.6 27.3 20.6  7                     Scenario description record
Aug UP/00.          53.  87.  7.8  7.8 92 1 1 1 1    Local Area Parameter record
2 00 12.5 65.3 20.6 27.3 20.6  7                     Scenario description record
Sep UP/00.          47.  84.  7.8  7.8 92 1 1 1 1    Local Area Parameter record
2 00 12.5 54.9 20.6 27.3 20.6  7                     Scenario description record
Oct UP/00.          41.  69. 11.5 11.5 92 1 1 1 1    Local Area Parameter record
2 00 12.5 40.4 20.6 27.3 20.6  7                     Scenario description record
Nov UP/00.          27.  54. 13.5 13.5 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 00 12.5 36.5 20.6 27.3 20.6  7                     Scenario description record
Dec UP/00.          26.  48. 15.0 15.0 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 07 12.5 25.7 20.6 27.3 20.6  1                     Scenario description record
Jan UP/07.          16.  36. 15.0 15.0 92 2 1 1 1    Local Area Parameter record
.88  .12  .027 .035 1                                Oxygenated fuels descriptive record.
2 07 12.5 34.3 20.6 27.3 20.6  1                     Scenario description record
Feb UP/07.          26.  43. 15.0 15.0 92 1 1 1 1    Local Area Parameter record
2 07 12.5 48.5 20.6 27.3 20.6  1                     Scenario description record
Mar UP/07.          36.  61. 13.5 13.5 92 1 1 1 1    Local Area Parameter record
2 07 12.5 48.7 20.6 27.3 20.6  1                     Scenario description record
Apr UP/07.          35.  63. 13.5 13.5 92 1 1 1 1    Local Area Parameter record
2 07 12.5 58.4 20.6 27.3 20.6  1                     Scenario description record
May UP/07.          44.  73.  9.0  9.0 92 1 1 1 1    Local Area Parameter record
2 07 12.5 61.9 20.6 27.3 20.6  1                     Scenario description record
Jun UP/07.          46.  77.  7.8  7.8 92 1 1 1 1    Local Area Parameter record
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2 07 12.5 69.0 20.6 27.3 20.6  7                    Scenario description record
Jul UP/07.          52.  86.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 07 12.5 70.0 20.6 27.3 20.6  7                    Scenario description record
Aug UP/07.          53.  87.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 07 12.5 65.3 20.6 27.3 20.6  7                    Scenario description record
Sep UP/07.          47.  84.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 07 12.5 54.9 20.6 27.3 20.6  7                    Scenario description record
Oct UP/07.          41.  69. 11.5 11.5 92 1 1 1 1   Local Area Parameter record
2 07 12.5 40.4 20.6 27.3 20.6  7                    Scenario description record
Nov UP/07.          27.  54. 13.5 13.5 92 2 1 1 1   Local Area Parameter record
.88  .12  .027 .035 1                               Oxygenated fuels descriptive record.
2 07 12.5 36.5 20.6 27.3 20.6  7                    Scenario description record
Dec UP/07.          26.  48. 15.0 15.0 92 2 1 1 1   Local Area Parameter record
.88  .12  .027 .035 1                               Oxygenated fuels descriptive record.
2 15 12.5 25.7 20.6 27.3 20.6  1                    Scenario description record
Jan UP/15.          16.  36. 15.0 15.0 92 2 1 1 1   Local Area Parameter record
.88  .12  .027 .035 1                               Oxygenated fuels descriptive record.
2 15 12.5 34.3 20.6 27.3 20.6  1                    Scenario description record
Feb UP/15.          26.  43. 15.0 15.0 92 1 1 1 1   Local Area Parameter record
2 15 12.5 48.5 20.6 27.3 20.6  1                    Scenario description record
Mar UP/15.          36.  61. 13.5 13.5 92 1 1 1 1   Local Area Parameter record
2 15 12.5 48.7 20.6 27.3 20.6  1                    Scenario description record
Apr UP/15.          35.  63. 13.5 13.5 92 1 1 1 1   Local Area Parameter record
2 15 12.5 58.4 20.6 27.3 20.6  1                    Scenario description record
May UP/15.          44.  73.  9.0  9.0 92 1 1 1 1   Local Area Parameter record
2 15 12.5 61.9 20.6 27.3 20.6  1                    Scenario description record
Jun UP/15.          46.  77.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 15 12.5 69.0 20.6 27.3 20.6  7                    Scenario description record
Jul UP/15.          52.  86.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 15 12.5 70.0 20.6 27.3 20.6  7                    Scenario description record
Aug UP/15.          53.  87.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 15 12.5 65.3 20.6 27.3 20.6  7                    Scenario description record
Sep UP/15.          47.  84.  7.8  7.8 92 1 1 1 1   Local Area Parameter record
2 15 12.5 54.9 20.6 27.3 20.6  7                    Scenario description record
Oct UP/15.          41.  69. 11.5 11.5 92 1 1 1 1   Local Area Parameter record
2 15 12.5 40.4 20.6 27.3 20.6  7                    Scenario description record
Nov UP/15.          27.  54. 13.5 13.5 92 2 1 1 1   Local Area Parameter record
.88  .12  .027 .035 1                               Oxygenated fuels descriptive record.
2 15 12.5 36.5 20.6 27.3 20.6  7                    Scenario description record
Dec UP/15.          26.  48. 15.0 15.0 92 2 1 1 1   Local Area Parameter record
.88  .12  .027 .035 1                               Oxygenated fuels descriptive record.
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```

```
MOBILE5B OUTPUT - 12.5 MPH

1 UP/SP Project - 12.5 MPH
 MOBILE5b (14-Sep-96)
0
-M170 Warning:
+               Exhaust emissions for gasoline fueled vehicles
                beginning in 1995 have been reduced as a result of
                Gasoline Detergent Additive Regulations (1994).
-M 83 Comment:
+               One or more evaporative temperatures (input daily
                maximum, input ambient, calculated hot soak, and/or
                calculated running loss) is 40F or less, or input
                daily minimum is 25F or less; no evaporative emission
                factors (hot soak, diurnal, running loss, or resting
                loss) will be calculated.
0I/M program selected:

0     Start year (January 1):              1988
      Pre-1981 MYR stringency rate:         24%
      First model year covered:            1968
      Last model year covered:             1993
      Waiver rate (pre-1981):               2.%
      Waiver rate (1981 and newer):         2.%
      Compliance Rate:                     95.%
      Inspection type:                     Computerized Test and Repair
      Effectiveness - HC: 0.50  CO: 0.50  NOx: 0.50
      Inspection frequency                 Annual
      Vehicle types covered:               LDGV - Yes
                                          LDGT1 - Yes
                                          LDGT2 - Yes
                                           HDGV - No
      1981 & later MYR test type:          2500 rpm / Idle
      Cutpoints, HC:  220.000   CO:    1.200   NOx:  999.000
 High alt, Annl and Bien Insp Freq TECH 1 & 2 I/M cred data
 Annl Insp Freq & TECH 4+ I/M credit 2500/Idle test data
0Functional Check Program Description:
0Check Start Model Yrs Vehicle Classes Covered    Inspection        Comp   Eff
      (Jan1) Covered   LDGV LDGT1 LDGT2 HDGV   Type        Freq     Rate   Adj
 ATP   1988  1968-1993 Yes  Yes   Yes   No  Test & Repair Annual    95.0%  0.00
0Air pump system disablements:       Yes  Catalyst removals:                 Yes
 Fuel inlet restrictor disablements: Yes  Tailpipe lead deposit test:         No
 EGR disablement:                    Yes  Evaporative system disablements:   Yes
 PCV system disablements:            Yes  Missing gas caps:                  Yes
```

0VOC HC emission factors include all evaporative HC emission factors, except for refueling emissions.

0

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/95. Minimum Temp: 16. (F) Maximum Temp: 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.89	5.10	7.04	5.72	12.74	1.23	2.11	7.69	5.13	4.869
Exhaust HC:	3.88	5.09	7.03	5.71	12.71	1.23	2.11	7.69	5.13	4.862
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	42.66	55.89	74.48	61.81	202.78	3.49	6.51	30.68	60.63	51.854
Exhaust NOX:	2.26	2.32	2.72	2.45	4.25	1.98	2.27	18.27	0.62	3.331
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	39.12	49.88	68.21	55.72	73.99	4.99	8.54	31.20	43.15	43.947
Idle CO:	434.39	578.13	794.21	646.94	1145.29	18.34	34.21	161.31	476.17	493.960
Idle NOX:	8.09	8.27	9.78	8.75	9.62	7.18	8.23	66.37	2.14	11.794

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi. Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)

Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or

calculated running loss) is 40F or less, or input
daily minimum is 25F or less; no evaporative emission
factors (hot soak, diurnal, running loss, or resting
loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Feb UP/95. Minimum Temp: 26. (F) Maximum Temp: 43. (F)
Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.80	4.92	6.73	5.49	12.41	1.23	2.11	7.69	4.81	4.744
Exhaust HC:	3.79	4.91	6.72	5.48	12.38	1.23	2.11	7.69	4.81	4.736
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	50.98	66.99	[illegible]	74.15	245.20	3.49	6.51	30.68	68.20	61.734
Exhaust NOX:	2.13	2.20	2.59	2.32	4.17	1.98	2.27	18.27	0.59	3.213
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	38.27	48.07	65.29	53.56	72.10	4.09	8.54	31.20	40.44	42.762
Idle CO:	522.40	698.28	962.72	782.49	1384.85	18.34	34.21	161.31	535.65	593.187
Idle NOX:	7.62	7.83	9.28	8.29	9.43	7.18	8.23	66.37	2.05	11.374

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 34.3 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 34.3 (F)
Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		0.00
WtDiurnal	0.00	0.00	0.00	0.00	0.00		0.00
Multiple	0.00	0.00	0.00	0.00	0.00		
Crankcase	0.01	0.01	0.01	0.01	0.03		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.00	0.00	0.00	0.00	0.00		0.00

-M170 Warning:
+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Mar UP/95.

Minimum Temp: 36. (F) Maximum Temp: 61. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.98	4.71	6.53	5.29	13.90	1.23	2.11	7.69	6.05	4.856
Exhaust HC:	3.05	3.96	5.49	4.45	11.26	1.23	2.11	7.69	4.23	3.952
Evaporat HC:	0.28	0.35	0.50	0.40	1.54				1.66	0.343
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.61	0.37	0.51	0.41	1.05					0.530
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.16	0.031
Exhaust CO:	43.97	57.95	78.19	64.39	233.07	3.49	6.51	30.68	58.50	54.287
Exhaust NOX:	1.94	2.02	2.38	2.13	4.01	1.98	2.27	18.27	0.55	3.038
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	30.71	38.77	53.29	43.39	65.58	4.99	8.54	31.20	35.55	35.066
Idle CO:	451.20	606.45	844.18	682.15	1316.37	18.34	34.21	161.31	459.46	519.043
Idle NOX:	6.95	7.18	8.53	7.61	9.08	7.18	8.23	66.37	1.91	10.753

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.5 (F)

Resting Loss Temp: 48.5 (F)

Hot Soak	1.21	1.00	1.23	1.07	2.68		1.42
WtDiurnal	3.88	6.42	11.92	8.07	43.27		14.68
Multiple	6.24	9.63	14.54	11.11	44.37		
Crankcase	0.01	0.01	0.01	0.01	0.03		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.04	0.04	0.04	0.04	0.05		0.07

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Apr UP/95.

Minimum Temp: 35. (F) Maximum Temp: 63. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	4.02	4.74	6.56	5.32	14.01	1.23	2.11	7.69	6.33	4.895

Exhaust HC:	3.04	3.95	5.48	4.44	11.25	1.23	2.11	7.69	4.22	3.946
Evaporat HC:	0.31	0.38	0.54	0.43	1.63				1.95	0.376
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.63	0.38	0.52	0.42	1.08					0.543
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.16	0.031
Exhaust CO:	43.98	57.94	78.17	64.38	233.00	3.49	6.51	30.68	58.38	54.285
Exhaust NOX:	1.94	2.02	2.37	2.13	4.00	1.98	2.27	18.27	0.55	3.036

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	30.66	38.70	53.19	43.31	65.50	4.99	8.54	31.20	35.50	35.007
Idle CO:	451.27	606.34	843.95	682.01	1315.98	18.34	34.21	161.31	458.52	519.034
Idle NOX:	6.94	7.17	8.52	7.60	9.07	7.18	8.23	66.37	1.90	10.746

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.7 (F)

Resting Loss Temp: 48.7 (F)

Hot Soak	1.24	1.03	1.26	1.10	2.75				1.45	
WtDiurnal	4.53	7.19	12.79	8.88	46.78				17.52	
Multiple	7.59	11.10	16.16	12.62	48.10					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.05				0.07	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0May UP/95. Minimum Temp: 44. (F) Maximum Temp: 73. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.09	4.02	5.64	4.54	12.63	1.23	2.11	7.69	5.11	4.052
Exhaust HC:	2.53	3.32	4.70	3.76	10.48	1.23	2.11	7.69	3.92	3.419
Evaporat HC:	0.16	0.24	0.40	0.30	1.34				0.97	0.226
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.36	0.41	0.50	0.44	0.73					0.366
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.21	0.041
Exhaust CO:	35.68	48.35	66.86	54.25	221.41	3.49	6.51	30.68	53.02	45.969
Exhaust NOX:	1.81	1.90	2.24	2.01	3.94	1.98	2.27	18.27	0.52	2.919

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	25.52	32.57	45.48	36.68	61.04	4.99	8.54	31.20	32.92	29.851
Idle CO:	367.46	510.02	724.36	578.27	1250.51	18.34	34.21	161.31	416.44	436.351
Idle NOX:	6.47	6.74	8.04	7.15	8.92	7.18	8.23	66.37	1.82	10.328

0Evaporative Emissions by Component — Weathered RVP: 9.0

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)

Hot Soak Temp: 58.4 (F)
Running Loss Temp: 58.4 (F)
Resting Loss Temp: 58.4 (F)

Hot Soak	0.38	0.46	0.66	0.52	2.15				1.28	
WtDiurnal	2.71	4.78	10.43	6.48	39.77				8.02	
Multiple	5.88	9.12	13.16	10.34	45.41					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.09	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jun UP/95. Minimum Temp: 46. (F) Maximum Temp: 77. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.87	3.73	5.27	4.22	12.01	1.23	2.11	7.69	4.90	3.807
Exhaust HC:	2.40	3.16	4.48	3.58	10.23	1.23	2.11	7.69	3.82	3.280
Evaporat HC:	0.15	0.23	0.39	0.28	1.20				0.84	0.212
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.27	0.30	0.35	0.31	0.50					0.271
Rsting L HC:	0.05	0.04	0.04	0.04	0.08				0.24	0.045
Exhaust CO:	33.72	46.05	64.09	51.79	218.19	3.49	6.51	30.68	51.30	43.969
Exhaust NOX:	1.77	1.86	2.19	1.97	3.91	1.98	2.27	18.27	0.51	2.880

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	24.20	30.94	43.40	34.90	59.59	4.99	8.54	31.20	32.12	28.499
Idle CO:	347.71	486.87	695.33	553.25	1232.34	18.34	34.21	161.31	402.89	416.604
Idle NOX:	6.32	6.59	7.88	7.00	8.85	7.18	8.23	66.37	1.79	10.191

0Evaporative Emissions by Component — Weathered RVP: 7.8

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)

Hot Soak Temp: 61.9 (F)
Running Loss Temp: 61.9 (F)
Resting Loss Temp: 61.9 (F)

Hot Soak	0.32	0.39	0.52	0.43	1.52				1.34	
WtDiurnal	2.57	4.55	10.28	6.28	39.46				6.62	

Multiple	6.01	9.34	13.38	10.55	44.59					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.06	0.05	0.05	0.05	0.08				0.10	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jul UP/95. Minimum Temp: 52. (F) Maximum Temp: 86. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.73	3.48	4.91	3.94	11.40	1.22	2.06	7.56	5.29	3.627
Exhaust HC:	2.12	2.75	3.98	3.14	9.32	1.22	2.06	7.56	3.60	2.954
Evaporat HC:	0.19	0.29	0.43	0.33	1.34				1.41	0.262
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.36	0.39	0.46	0.41	0.65					0.357
Rsting L HC:	0.06	0.05	0.05	0.05	0.09				0.29	0.055
Exhaust CO:	29.20	40.15	56.54	45.35	202.32	3.44	6.40	30.44	48.09	38.921
Exhaust NOX:	1.67	1.77	2.14	1.89	3.82	1.96	2.24	17.69	0.50	2.771
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.41	26.95	38.34	30.57	54.27	4.97	8.37	30.68	30.23	25.407
Idle CO:	302.86	425.43	612.98	484.97	1142.71	18.10	33.66	160.06	377.73	367.513
Idle NOX:	5.96	6.27	7.67	6.71	8.64	7.11	8.15	64.25	1.73	9.794

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)
Resting Loss Temp: 69.0 (F)

Hot Soak	0.48	0.58	0.77	0.64	2.01				1.76	
WtDiurnal	3.14	5.27	10.41	6.81	39.20				11.72	
Multiple	8.32	12.60	16.00	13.62	46.90					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.07	0.06	0.07	0.07	0.09				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of

Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Aug UP/95. Minimum Temp: 53. (F) Maximum Temp: 87. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.73	3.47	4.89	3.92	11.39	1.22	2.06	7.56	5.35	3.619
Exhaust HC:	2.09	2.71	3.93	3.10	9.26	1.22	2.06	7.56	3.58	2.922
Evaporat HC:	0.20	0.30	0.44	0.34	1.37				1.48	0.271
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.37	0.40	0.47	0.43	0.67					0.369
Rsting L HC:	0.06	0.06	0.05	0.05	0.09				0.30	0.056
Exhaust CO:	28.69	39.57	55.83	44.73	201.48	3.44	6.40	30.44	47.67	38.409
Exhaust NOX:	1.66	1.76	2.13	1.88	3.81	1.96	2.24	17.69	0.49	2.760
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.11	26.58	37.85	30.16	53.90	4.97	8.37	30.68	30.05	25.097
Idle CO:	297.78	419.62	605.62	478.67	1137.95	18.10	33.66	160.06	374.41	362.466
Idle NOX:	5.92	6.23	7.62	6.67	8.62	7.11	8.15	64.25	1.72	9.757

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 70.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 70.0 (F)

Resting Loss Temp: 70.0 (F)

Hot Soak	0.51	0.62	0.81	0.67	2.09	1.81	
WtDiurnal	3.26	5.44	10.54	6.97	39.35	12.38	
Multiple	8.73	13.14	16.44	14.13	47.33		
Crankcase	0.01	0.01	0.01	0.01	0.03	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.07	0.07	0.07	0.07	0.10	0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Sep UP/95. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.78	3.56	5.02	4.02	11.48	1.22	2.06	7.56	5.25	3.682
Exhaust HC:	2.24	2.90	4.17	3.30	9.57	1.22	2.06	7.56	3.68	3.078
Evaporat HC:	0.18	0.27	0.41	0.31	1.27				1.30	0.244
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.32	0.34	0.40	0.36	0.56					0.312
Rsting L HC:	0.05	0.05	0.05	0.05	0.08				0.26	0.049
Exhaust CO:	31.10	42.36	59.21	47.71	205.48	3.44	6.40	30.44	49.72	40.851
Exhaust NOX:	1.71	1.81	2.19	1.93	3.85	1.96	2.24	17.69	0.51	2.809
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.58	28.40	40.22	32.15	55.70	4.97	8.37	30.68	30.96	26.614
Idle CO:	322.02	447.45	640.92	508.87	1160.54	18.10	33.66	160.06	390.46	386.577
Idle NOX:	6.11	6.41	7.84	6.87	8.71	7.11	8.15	64.25	1.76	9.931
0Evaporative Emissions by Component					Weathered RVP: 7.8				Hot Soak Temp: 65.3 (F)	
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)									Running Loss Temp: 65.3 (F)	
									Resting Loss Temp: 65.3 (F)	
Hot Soak	0.39	0.47	0.62	0.51	1.73				1.54	
WtDiurnal	3.02	5.10	10.28	6.65	39.03				10.98	
Multiple	7.87	12.01	15.51	13.06	46.42					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.06	0.06	0.06	0.06	0.08				0.11	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994)

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Oct UP/95. Minimum Temp: 41. (F) Maximum Temp: 69. (F)
Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	4.11	4.59	6.38	5.16	13.69	1.22	2.06	7.56	5.79	4.894
Exhaust HC:	2.82	3.59	5.04	4.05	10.39	1.22	2.06	7.56	3.97	3.672
Evaporat HC:	0.26	0.35	0.48	0.39	1.55				1.63	0.327
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Runing L HC:	0.99	0.62	0.83	0.68	1.68					0.859
Rsting L HC:	0.04	0.04	0.03	0.04	0.06				0.19	0.037
Exhaust CO:	42.50	55.12	74.19	61.17	220.72	3.44	6.40	30.44	54.85	52.123
Exhaust NOX:	1.85	1.94	2.33	2.07	3.88	1.96	2.24	17.69	0.53	2.935

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	28.46	35.18	48.76	39.49	60.51	4.97	8.37	30.68	33.33	32.435
Idle CO:	438.03	576.25	800.73	647.51	1246.59	18.10	33.66	160.06	430.82	499.459
Idle NOX:	6.62	6.88	8.37	7.35	8.78	7.11	8.15	64.25	1.85	10.381

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)

Resting Loss Temp: 54.9 (F)

Hot Soak	1.02	1.03	1.25	1.09	2.83				1.61	
WtDiurnal	3.60	5.91	11.07	7.46	41.29				14.15	
Multiple	7.38	11.15	14.91	12.28	46.23					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.06				0.08	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/95. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.06	4.03	5.78	4.58	11.94	1.22	2.06	7.56	5.54	4.024
Exhaust HC:	2.89	3.80	5.39	4.30	11.00	1.22	2.06	7.56	4.37	3.803
Evaporat HC:	0.12	0.19	0.34	0.24	0.85				1.04	0.172
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.03	0.02	0.02	0.02	0.05					0.025
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.13	0.024
Exhaust CO:	33.81	44.33	60.16	49.36	181.89	3.44	6.40	30.44	51.26	42.284
Exhaust NOX:	2.02	2.11	2.54	2.25	4.07	1.96	2.24	17.69	0.57	3.098

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.16	37.18	52.12	41.92	64.05	4.97	8.37	30.68	36.73	33.655
Idle CO:	345.88	459.05	640.81	516.75	1027.31	18.10	33.66	160.06	402.60	399.686
Idle NOX:	7.23	7.50	9.12	8.01	9.21	7.11	8.15	64.25	1.98	10.955

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.05	0.04	0.05	0.04	0.12				0.07	
WtDiurnal	2.91	4.94	10.15	6.50	38.90				10.32	
Multiple	4.27	6.89	11.72	8.34	39.79					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.03	0.03	0.03	0.03	0.04				0.05	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/95. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.10	4.07	5.75	4.60	11.34	1.22	2.06	7.56	4.53	4.027
Exhaust HC:	3.09	4.06	5.74	4.59	11.31	1.22	2.06	7.56	4.53	4.020
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	35.73	46.71	63.11	51.91	184.95	3.44	6.40	30.44	53.51	44.282

Exhaust NOX:	2.08	2.17	2.61	2.31	4.11	1.96	2.24	17.69	0.58	3.148

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	31.24	39.77	55.53	44.77	65.85	4.97	8.37	30.68	38.10	35.790
Idle CO:	365.31	482.85	671.54	542.75	1044.59	18.10	33.66	160.06	420.28	419.491
Idle NOX:	7.42	7.68	9.34	8.21	9.30	7.11	8.15	64.25	2.02	11.133

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/00. Minimum Temp: 16. (F) Maximum Temp: 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.16	4.03	5.56	4.51	8.32	0.96	1.48	6.80	4.91	3.945
Exhaust HC:	3.15	4.03	5.55	4.50	8.30	0.96	1.48	6.80	4.91	3.939
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	34.23	43.19	56.50	47.33	126.49	2.83	4.97	28.94	60.27	40.443
Exhaust NOX:	1.95	2.20	2.98	2.44	3.76	1.63	1.79	13.85	0.61	2.938

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.31	38.31	52.71	42.78	48.35	3.89	6.00	27.59	41.27	33.517
Idle CO:	311.82	401.48	532.59	442.20	714.43	14.90	26.13	152.19	473.37	349.786
Idle NOX:	7.02	7.92	10.76	8.80	8.51	5.94	6.51	50.30	2.11	10.455

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)

Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Feb UP/00. Minimum Temp: 26. (F) Maximum Temp: 43. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.18	3.97	5.47	4.44	8.15	0.96	1.48	6.80	4.60	3.928
Exhaust HC:	3.17	3.97	5.46	4.43	8.13	0.96	1.48	6.80	4.60	3.922
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000

[redacted]

Exhaust CO:	41.42	52.05	68.67	57.21	154.09	2.83	4.97	28.94	67.80	48.508
Exhaust NOX:	1.84	2.08	2.82	2.31	3.70	1.63	1.79	13.85	0.58	2.834

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.44	37.66	51.78	42.05	47.34	3.89	6.00	27.59	38.68	33.346
Idle CO:	378.21	486.13	650.38	537.15	870.31	14.90	26.13	152.19	532.50	422.126
Idle NOX:	6.65	7.48	10.16	8.31	8.37	5.94	6.51	50.30	2.02	10.083

0Evaporative Emissions by Component — Weathered RVP: 15.0 — Hot Soak Temp: 34.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 34.3 (F)

Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Mar UP/00. Minimum Temp: 36. (F) Maximum Temp: 61. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.40	3.84	5.25	4.28	9.29	0.96	1.48	6.80	5.87	4.064
Exhaust HC:	2.61	3.20	4.45	3.59	7.31	0.96	1.48	6.80	4.05	3.314
Evaporat HC:	0.24	0.27	0.33	0.29	1.12				1.66	0.270
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.53	0.35	0.45	0.38	0.81					0.456
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.16	0.023
Exhaust CO:	36.72	45.53	60.58	50.21	147.35	2.83	4.97	28.94	58.16	43.408
Exhaust NOX:	1.69	1.90	2.57	2.11	3.57	1.63	1.79	13.85	0.54	2.682

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	24.20	30.35	42.11	34.00	42.59	3.89	6.00	27.59	34.00	27.718
Idle CO:	335.09	426.07	574.83	472.28	832.21	14.90	26.13	152.19	456.76	375.984
Idle NOX:	6.10	6.83	9.29	7.60	8.08	5.94	6.51	50.30	1.89	9.538

0Evaporative Emissions by Component — Weathered RVP: 13.5 — Hot Soak Temp: 48.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 48.5 (F)

Resting Loss Temp: 48.5 (F)

Hot Soak	1.17	0.93	1.08	0.97	2.25	1.43
WtDiurnal	2.80	4.67	7.09	5.38	31.72	14.69
Multiple	4.35	6.83	9.21	7.53	32.99	
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.03	0.03	0.03	0.03	0.04	0.07

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Apr UP/00. Minimum Temp: 35. (F) Maximum Temp: 63. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.43	3.87	5.28	4.31	9.38	0.96	1.48	6.80	6.15	4.097
Exhaust HC:	2.61	3.19	4.44	3.58	7.31	0.96	1.48	6.80	4.04	3.311
Evaporat HC:	0.26	0.29	0.36	0.31	1.20				1.95	0.296
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.54	0.36	0.46	0.39	0.83					0.467
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.16	0.024
Exhaust CO:	36.77	45.57	60.63	50.24	147.40	2.83	4.97	28.94	58.04	43.447
Exhaust NOX:	1.69	1.90	2.57	2.11	3.56	1.63	1.79	13.85	0.54	2.680
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	24.17	30.31	42.04	33.95	42.54	3.89	6.00	27.59	33.95	27.684
Idle CO:	335.49	426.35	575.22	472.59	832.48	14.90	26.13	152.19	455.82	376.319
Idle NOX:	6.09	6.82	9.28	7.59	8.07	5.94	6.51	50.30	1.88	9.532

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.7 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.7 (F)
Resting Loss Temp: 48.7 (F)

Hot Soak	1.20	0.95	1.11	1.00	2.31	1.46
WtDiurnal	3.29	5.26	7.76	5.99	34.60	17.53
Multiple	5.38	7.86	10.36	8.59	36.12	
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.03	0.03	0.03	0.03	0.04	0.07

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0May UP/00. Minimum Temp: 44. (F) Maximum Temp: 73. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.64	3.20	4.41	3.58	8.21	0.96	1.48	6.80	4.93	3.366
Exhaust HC:	2.17	2.64	3.71	2.98	6.70	0.96	1.48	6.80	3.75	2.857
Evaporat HC:	0.12	0.17	0.24	0.19	0.91				0.97	0.159
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.32	0.35	0.43	0.38	0.55					0.319
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.21	0.031
Exhaust CO:	29.60	36.93	49.84	40.94	137.52	2.83	4.97	28.94	52.71	36.123
Exhaust NOX:	1.58	1.78	2.40	1.97	3.53	1.63	1.79	13.85	0.52	2.574

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	20.16	25.12	35.16	28.24	39.00	3.89	6.00	27.59	31.49	23.509
Idle CO:	270.67	348.23	475.89	387.88	776.70	14.90	26.13	152.19	413.99	310.993
Idle NOX:	5.70	6.37	8.68	7.09	8.00	5.94	6.51	50.30	1.80	9.150

0Evaporative Emissions by Component Weathered RVP: 9.0 Hot Soak Temp: 58.4 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 58.4 (F)
Resting Loss Temp: 58.4 (F)

Hot Soak	0.33	0.39	0.50	0.42	1.57					
WtDiurnal	1.89	3.32	5.73	4.03	27.93				1.28	
Multiple	3.82	5.48	7.50	6.07	36.74				8.03	
Crankcase	0.01	0.01	0.01	0.01	0.02					
Refuel	0.00	0.00	0.00	0.00	0.00				0.00	
Resting	0.04	0.04	0.04	0.04	0.05				0.09	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jun UP/00. Minimum Temp: 46. (F) Maximum Temp: 77. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.45	2.95	4.09	3.30	7.77	0.96	1.48	6.80	4.73	3.157
Exhaust HC:	2.07	2.50	3.53	2.82	6.51	0.96	1.48	6.80	3.65	2.742
Evaporat HC:	0.11	0.16	0.23	0.18	0.81				0.84	0.149
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.24	0.25	0.30	0.26	0.38					0.231
Rsting L HC:	0.04	0.03	0.03	0.03	0.06				0.24	0.034
Exhaust CO:	28.10	35.04	47.50	38.91	135.29	2.83	4.97	28.94	51.00	34.556
Exhaust NOX:	1.55	1.73	2.35	1.93	3.51	1.63	1.79	13.85	0.51	2.539
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	19.16	23.79	33.41	26.78	37.92	3.89	6.00	27.59	30.71	22.455
Idle CO:	257.03	331.00	454.24	369.28	764.10	14.90	26.13	152.19	400.52	296.976
Idle NOX:	5.57	6.23	8.49	6.93	7.95	5.94	6.51	50.30	1.77	9.027

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 61.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 61.9 (F)

Resting Loss Temp: 61.9 (F)

Hot Soak	0.27	0.34	0.41	0.36	1.16				1.34	
WtDiurnal	1.80	3.17	5.60	3.88	27.37				6.63	
Multiple	4.17	5.78	7.85	6.39	35.41					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.06				0.10	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jul UP/00. Minimum Temp: 52. (F) Maximum Temp: 86. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.36	2.80	3.87	3.14	7.44	0.92	1.41	6.76	5.18	3.050

Exhaust HC:	1.86	2.22	3.17	2.51	5.88	0.92	1.41	6.76	3.49	2.511
Evaporat HC:	0.16	0.23	0.28	0.24	0.99				1.41	0.203
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.30	0.32	0.39	0.34	0.49					0.296
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.29	0.040
Exhaust CO:	25.07	30.72	42.29	34.31	124.07	2.75	4.79	28.85	47.81	31.052
Exhaust NOX:	1.47	1.65	2.24	1.83	3.42	1.59	1.73	13.44	0.49	2.442

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.27	21.10	29.95	23.85	34.26	3.74	5.71	27.43	29.32	20.358
Idle CO:	229.44	291.87	406.16	327.31	700.75	14.43	25.17	151.68	375.50	266.241
Idle NOX:	5.28	5.90	8.06	6.57	7.74	5.78	6.30	48.80	1.71	8.674

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)

Resting Loss Temp: 69.0 (F)

Hot Soak	0.44	0.55	0.67	0.58	1.68				1.76	
WtDiurnal	2.29	3.93	6.10	4.57	28.48				11.72	
Multiple	6.47	9.56	11.41	10.10	39.71					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Aug UP/00. Minimum Temp: 53. (F) Maximum Temp: 87. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.36	2.79	3.86	3.12	7.44	0.92	1.41	6.76	5.25	3.044
Exhaust HC:	1.84	2.19	3.12	2.48	5.84	0.92	1.41	6.76	3.47	2.484
Evaporat HC:	0.16	0.24	0.29	0.26	1.03				1.48	0.212
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.31	0.33	0.40	0.35	0.51					0.306
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.30	0.042
Exhaust CO:	24.68	30.23	41.69	33.79	123.49	2.75	4.79	28.85	47.39	30.647
Exhaust NOX:	1.46	1.64	2.22	1.82	3.41	1.59	1.73	13.44	0.49	2.433

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.04	20.80	29.54	23.51	33.98	3.74	5.71	27.43	29.13	20.111
Idle CO:	225.92	287.41	400.56	322.50	697.45	14.43	25.17	151.68	372.21	262.621
Idle NOX:	5.25	5.87	8.01	6.53	7.73	5.78	6.30	48.80	1.70	8.641

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 70.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 70.0 (F)

Resting Loss Temp: 70.0 (F)

Hot Soak	0.47	0.59	0.72	0.62	1.77				1.81	
WtDiurnal	2.38	4.07	6.24	4.70	28.75				12.39	
Multiple	6.82	10.04	11.90	10.58	40.38					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.12	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Sep UP/00. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.40	2.87	3.97	3.21	7.47	0.92	1.41	6.76	5.14	3.096
Exhaust HC:	1.96	2.34	3.33	2.65	6.07	0.92	1.41	6.76	3.57	2.615
Evaporat HC:	0.14	0.21	0.26	0.23	0.91				1.30	0.185
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.27	0.28	0.34	0.30	0.43					0.259
Rsting L HC:	0.04	0.04	0.04	0.04	0.06				0.26	0.036
Exhaust CO:	26.53	32.57	44.59	36.30	126.26	2.75	4.79	28.85	49.43	32.580
Exhaust NOX:	1.50	1.69	2.29	1.87	3.44	1.59	1.73	13.44	0.50	2.477

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	18.18	22.29	31.53	25.15	35.33	3.74	5.71	27.43	30.02	21.316
Idle CO:	242.75	308.72	427.41	345.53	713.11	14.43	25.17	151.68	388.17	279.928
Idle NOX:	5.40	6.05	8.26	6.73	7.80	5.78	6.30	48.80	1.74	8.796

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 65.3 (F)

Resting Loss Temp: 65.3 (F)

Hot Soak	0.34	0.43	0.52	0.45	1.38				1.54	
WtDiurnal	2.19	3.79	5.96	4.43	28.18				10.99	

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Multiple	6.09	9.00	10.82	9.53	38.96		
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.04	0.04	0.05	0.04	0.06	0.11	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Oct UP/00. Minimum Temp: 41. (F) Maximum Temp: 69. (F)
Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.56	3.85	5.28	4.29	9.25	0.92	1.41	6.76	5.67	4.163
Exhaust HC:	2.48	2.98	4.18	3.36	6.77	0.92	1.41	6.76	3.85	3.158
Evaporat HC:	0.21	0.27	0.32	0.29	1.14				1.63	0.255
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.83	0.57	0.74	0.62	1.29					0.724
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.19	0.027
Exhaust CO:	37.06	44.88	60.13	49.61	140.97	2.75	4.79	28.85	54.53	43.225
Exhaust NOX:	1.62	1.82	2.47	2.03	3.43	1.59	1.73	13.44	0.53	2.593
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	23.06	28.35	39.63	31.85	39.40	3.74	5.71	27.43	32.32	26.308
Idle CO:	338.06	420.74	571.56	467.51	796.18	14.43	25.17	151.68	428.29	375.114
Idle NOX:	5.84	6.55	8.92	7.28	7.76	5.78	6.30	48.80	1.83	9.217

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)
Resting Loss Temp: 54.9 (F)

Hot Soak	0.94	0.94	1.10	0.99	2.35	1.62	
WtDiurnal	2.64	4.45	6.66	5.10	30.31	14.15	
Multiple	5.19	7.51	9.36	8.05	36.02		
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.03	0.03	0.03	0.03	0.05	0.08	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of

Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1s: of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/00. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.57	3.20	4.48	3.60	7.72	0.92	1.41	6.76	5.41	3.314
Exhaust HC:	2.44	3.03	4.24	3.40	7.08	0.92	1.41	6.76	4.24	3.153
Evaporat HC:	0.09	0.14	0.20	0.16	0.57				1.04	0.122
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.02	0.02	0.02	0.02	0.04					0.021
Rsting L HC:	0.02	0.02	0.02	0.02	0.03				0.13	0.018
Exhaust CO:	27.89	34.63	45.99	38.16	111.86	2.75	4.79	28.85	50.96	33.492
Exhaust NOX:	1.76	1.99	2.69	2.20	3.61	1.59	1.73	13.44	0.57	2.731
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.65	28.79	40.18	32.32	41.25	3.74	5.71	27.43	35.62	26.267
Idle CO:	254.13	323.63	435.54	358.34	631.78	14.43	25.17	151.68	400.23	288.016
Idle NOX:	6.32	7.13	9.71	7.93	8.18	5.78	6.30	48.80	1.96	9.707

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.05	0.04	0.04	0.04	0.09				0.07	
WtDiurnal	2.11	3.66	5.83	4.29	27.92				10.33	
Multiple	2.96	4.95	7.12	5.58	28.85					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.03				0.05	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input

daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/00. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.60	3.25	4.53	3.64	7.33	0.92	1.41	6.76	4.40	3.331
Exhaust HC:	2.60	3.24	4.53	3.64	7.32	0.92	1.41	6.76	4.40	3.325
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	29.39	36.58	48.43	40.25	113.97	2.75	4.79	28.85	53.20	35.071
Exhaust NOX:	1.80	2.04	2.76	2.26	3.64	1.59	1.73	13.44	0.58	2.775
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	24.14	30.84	42.91	34.58	42.61	3.74	5.71	27.43	36.95	27.859
Idle CO:	267.75	341.36	458.08	377.56	643.72	14.43	25.17	151.68	417.81	302.185
Idle NOX:	6.48	7.31	9.96	8.14	8.24	5.78	6.30	48.80	2.00	9.864

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		
WtDiurnal	0.00	0.00	0.00	0.00	0.00	0.00	
Multiple	0.00	0.00	0.00	0.00	0.00	0.00	
Crankcase	0.01	0.01	0.01	0.01	0.02		
Refuel	0.00	0.00	0.00	0.00	0.00	0.00	
Resting	0.00	0.00	0.00	0.00	0.00		
						0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily

maximum, input ambient, calculated hot soak, and/or
calculated running loss) is 40F or less, or input
daily minimum is 25F or less; no evaporative emission
factors (hot soak, diurnal, running loss, or resting
loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jan UP/07. Minimum Temp: 16. (F) Maximum Temp: 36. (F)
Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120
Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035
Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.98	3.73	5.19	4.17	6.15	0.65	1.09	6.47	4.91	3.689
Exhaust HC:	2.97	3.72	5.18	4.17	6.14	0.65	1.09	6.47	4.91	3.683
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	32.94	40.30	52.39	44.00	77.30	2.17	3.99	28.14	60.27	37.155
Exhaust NOX:	1.77	2.12	2.96	2.37	3.39	1.29	1.47	10.21	0.61	2.633
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	25.99	33.94	47.35	38.04	35.77	2.64	4.40	26.26	41.27	29.753
Idle CO:	281.51	333.25	438.44	365.43	436.61	11.41	21.00	147.95	473.37	300.056
Idle NOX:	6.40	7.66	10.69	8.58	7.69	4.68	5.33	37.07	2.11	9.392

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)
Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		
WtDiurnal	0.00	0.00	0.00	0.00	0.00	0.00	
Multiple	0.00	0.00	0.00	0.00	0.00	0.00	
Crankcase	0.01	0.01	0.01	0.01	0.01		
Refuel	0.00	0.00	0.00	0.00	0.00	0.00	
Resting	0.00	0.00	0.00	0.00	0.00		
						0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Feb UP/07. Minimum Temp: 26. (F) Maximum Temp: 43. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.05	3.77	5.28	4.23	6.07	0.65	1.09	6.47	4.60	3.744
Exhaust HC:	3.04	3.76	5.27	4.22	6.06	0.65	1.09	6.47	4.60	3.737
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	40.28	48.78	64.57	53.61	96.09	2.17	3.99	28.14	67.80	44.913
Exhaust NOX:	1.68	2.00	2.79	2.24	3.34	1.29	1.47	10.21	0.58	2.541
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	26.62	34.29	48.17	38.53	35.26	2.64	4.40	26.26	38.68	30.236
Idle CO:	344.45	403.92	541.18	445.91	542.71	11.41	21.00	147.95	532.50	364.250
Idle NOX:	6.07	7.24	10.10	8.11	7.56	4.68	5.33	37.07	2.02	9.060

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 34.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 34.3 (F)

Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		0.00
WtDiurnal	0.00	0.00	0.00	0.00	0.00		0.00
Multiple	0.00	0.00	0.00	0.00	0.00		
Crankcase	0.01	0.01	0.01	0.01	0.01		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.00	0.00	0.00	0.00	0.00		0.00

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Mar UP/07. Minimum Temp: 36. (F) Maximum Temp: 61. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.16	3.66	5.04	4.09	6.90	0.65	1.09	6.47	5.87	3.803
Exhaust HC:	2.55	3.08	4.34	3.47	5.34	0.65	1.09	6.47	4.05	3.205
Evaporat HC:	0.19	0.23	0.25	0.24	0.89				1.66	0.217
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.40	0.34	0.44	0.37	0.65					0.368
Rsting L HC:	0.01	0.01	0.01	0.01	0.03				0.16	0.013
Exhaust CO:	36.58	43.16	57.65	47.59	92.98	2.17	3.99	28.14	58.16	40.836
Exhaust NOX:	1.55	1.83	2.56	2.05	3.21	1.29	1.47	10.21	0.54	2.406
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.34	28.07	39.65	31.61	31.07	2.64	4.40	26.26	34.00	25.553
Idle CO:	312.82	357.82	483.72	396.33	525.13	11.41	21.00	147.95	456.76	330.253
Idle NOX:	5.61	6.63	9.25	7.43	7.28	4.68	5.33	37.07	1.89	8.577

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.5 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.5 (F)
Resting Loss Temp: 48.5 (F)

Hot Soak	0.96	0.85	0.98	0.89	1.97	1.43	
WtDiurnal	2.21	3.82	4.55	4.03	22.79	14.69	
Multiple	3.29	5.47	6.40	5.73	23.72		
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.01	0.02	0.02	0.02	0.03	0.07	

-M170 Warning:
+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Apr UP/07. Minimum Temp: 35. (F) Maximum Temp: 63. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	

VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.19	3.69	5.07	4.11	6.97	0.65	1.09	6.47	6.15	3.829
Exhaust HC:	2.55	3.08	4.34	3.46	5.33	0.65	1.09	6.47	4.04	3.202
Evaporat HC:	0.21	0.25	0.27	0.26	0.95				1.95	0.237
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.41	0.35	0.45	0.38	0.67					0.376
Rsting L HC:	0.01	0.01	0.01	0.01	0.03				0.16	0.013
Exhaust CO:	36.65	43.23	57.74	47.67	93.10	2.17	3.99	28.14	58.04	40.903
Exhaust NOX:	1.55	1.83	2.55	2.05	3.21	1.29	1.47	10.21	0.54	2.404
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.32	28.04	39.61	31.58	31.03	2.64	4.40	26.26	33.95	25.531
Idle CO:	313.43	358.33	484.51	396.93	525.81	11.41	21.00	147.95	455.82	330.808
Idle NOX:	5.60	6.62	9.24	7.42	7.27	4.68	5.33	37.07	1.88	8.572
0Evaporative Emissions by Component					Weathered RVP: 13.5				Hot Soak Temp: 48.7 (F)	
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)									Running Loss Temp: 48.7 (F)	
									Resting Loss Temp: 48.7 (F)	
Hot Soak	0.99	0.88	1.01	0.92	2.03				1.46	
WtDiurnal	2.59	4.29	5.09	4.52	25.12				17.53	
Multiple	3.99	6.26	7.30	6.56	26.23					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.03				0.07	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of *Gasoline Detergent Additive Regulations* (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0May UP/07. Minimum Temp: 44. (F) Maximum Temp: 73. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.51	2.99	4.14	3.34	5.89	0.65	1.09	6.47	4.93	3.169
Exhaust HC:	2.14	2.54	3.59	2.87	4.76	0.65	1.09	6.47	3.75	2.769
Evaporat HC:	0.09	0.14	0.15	0.14	0.65				0.97	0.122
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.26	0.29	0.38	0.32	0.45					0.260
Rsting L HC:	0.02	0.02	0.02	0.02	0.03				0.21	0.018

Exhaust CO:	29.62	34.45	46.24	38.06	84.68	2.17	3.99	28.14	52.71	33.668
Exhaust NOX:	1.45	1.71	2.39	1.92	3.19	1.29	1.47	10.21	0.52	2.308

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	18.74	23.19	32.84	26.14	27.74	2.64	4.40	26.26	31.49	21.726
Idle CO:	253.28	286.24	389.15	317.72	478.29	11.41	21.00	147.95	413.99	270.584
Idle NOX:	5.26	6.18	8.63	6.93	7.22	4.68	5.33	37.07	1.80	8.224

0Evaporative Emissions by Component Weathered RVP: 9.0 Hot Soak Temp: 58.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 58.4 (F)

Resting Loss Temp: 58.4 (F)

Hot Soak	0.28	0.35	0.42	0.37	1.14				1.28	
WtDiurnal	1.51	2.70	3.28	2.87	18.79				8.03	
Multiple	2.51	3.58	4.27	3.78	27.98					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.04				0.09	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jun UP/07. Minimum Temp: 46. (F) Maximum Temp: 77. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+	----	----	----	----	----	----	----	----	----	----
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.33	2.76	3.83	3.09	5.53	0.65	1.09	6.47	4.73	2.974
Exhaust HC:	2.04	2.41	3.41	2.72	4.60	0.65	1.09	6.47	3.65	2.662
Evaporat HC:	0.09	0.13	0.14	0.13	0.59				0.84	0.114
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.18	0.20	0.25	0.21	0.30					0.178
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.24	0.020
Exhaust CO:	28.28	32.66	43.98	36.12	83.16	2.17	3.99	28.14	51.00	32.261
Exhaust NOX:	1.42	1.67	2.33	1.87	3.17	1.29	1.47	10.21	0.51	2.277

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.87	21.99	31.18	24.80	26.77	2.64	4.40	26.26	30.71	20.789
Idle CO:	241.86	271.53	370.37	301.76	469.67	11.41	21.00	147.95	400.52	258.870
Idle NOX:	5.15	6.04	8.43	6.77	7.17	4.68	5.33	37.07	1.77	8.113

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 61.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 61.9 (F)

						Resting Loss Temp: 61.9 (F)
Hot Soak	0.23	0.31	0.36	0.32	0.90	1.34
WtDiurnal	1.44	2.60	3.16	2.77	18.04	6.63
Multiple	2.74	3.60	4.22	3.78	27.09	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.02	0.02	0.03	0.03	0.04	0.10

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jul UP/07. Minimum Temp: 52. (F) Maximum Temp: 86. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.24	2.65	3.65	2.96	5.50	0.65	1.08	6.47	5.18	2.885
Exhaust HC:	1.86	2.18	3.10	2.46	4.26	0.65	1.08	6.47	3.49	2.470
Evaporat HC:	0.13	0.19	0.21	0.20	0.79				1.41	0.165
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.23	0.25	0.32	0.27	0.39					0.227
Rsting L HC:	0.02	0.02	0.02	0.02	0.05				0.29	0.023
Exhaust CO:	25.78	29.26	39.75	32.46	79.56	2.16	3.95	28.13	47.81	29.600
Exhaust NOX:	1.36	1.59	2.23	1.79	3.11	1.29	1.46	10.09	0.49	2.209
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	16.28	19.89	28.31	22.46	24.82	2.64	4.36	26.24	29.32	19.110
Idle CO:	220.59	243.76	335.73	271.87	449.32	11.35	20.77	147.91	375.50	236.854
Idle NOX:	4.92	5.77	8.06	6.47	7.05	4.68	5.31	36.64	1.71	7.868

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)
Resting Loss Temp: 69.0 (F)

Hot Soak	0.40	0.54	0.64	0.57	1.47	1.76
WtDiurnal	1.85	3.28	3.95	3.47	20.47	11.72
Multiple	4.54	6.68	7.25	6.84	32.81	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.03	0.03	0.03	0.03	0.05	0.12

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Aug UP/07. Minimum Temp: 53. (F) Maximum Temp: 87. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.23	2.64	3.63	2.94	5.50	0.65	1.08	6.47	5.25	2.876
Exhaust HC:	1.84	2.15	3.05	2.43	4.22	0.65	1.08	6.47	3.47	2.445
Evaporat HC:	0.13	0.20	0.22	0.21	0.83				1.48	0.174
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.24	0.26	0.33	0.28	0.41					0.234
Rsting L HC:	0.02	0.03	0.03	0.03	0.05				0.30	0.024
Exhaust CO:	25.44	28.79	39.16	31.96	79.10	2.16	3.95	28.13	47.39	29.232
Exhaust NOX:	1.35	1.58	2.21	1.78	3.11	1.29	1.46	10.09	0.49	2.200
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	16.07	19.60	27.92	22.14	24.56	2.64	4.36	26.24	29.13	18.884
Idle CO:	217.62	239.89	330.82	267.69	446.74	11.35	20.77	147.91	372.21	233.790
Idle NOX:	4.89	5.73	8.01	6.43	7.04	4.68	5.31	36.64	1.70	7.838

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 70.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 70.0 (F)
Resting Loss Temp: 70.0 (F)

Hot Soak	0.42	0.58	0.69	0.61	1.58				1.81	
WtDiurnal	1.92	3.40	4.08	3.60	20.83				12.39	
Multiple	4.80	7.23	7.86	7.41	33.61					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.03	0.03	0.03	0.03	0.05				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Sep UP/07. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.29	2.72	3.76	3.04	5.53	0.65	1.08	6.47	5.14	2.940
Exhaust HC:	1.95	2.30	3.27	2.60	4.43	0.65	1.08	6.47	3.57	2.570
Evaporat HC:	0.11	0.17	0.18	0.18	0.71				1.30	0.148
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.20	0.22	0.29	0.24	0.35					0.201
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.26	0.021
Exhaust CO:	27.10	31.03	41.98	34.38	81.27	2.16	3.95	28.13	49.42	30.992
Exhaust NOX:	1.39	1.63	2.28	1.83	3.14	1.29	1.46	10.09	0.50	2.240
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	17.10	21.00	29.86	23.70	25.81	2.64	4.36	26.24	30.02	19.984
Idle CO:	231.82	258.40	354.39	287.74	459.00	11.35	20.77	147.91	388.17	248.457
Idle NOX:	5.03	5.91	8.26	6.63	7.11	4.68	5.31	36.64	1.74	7.980

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 65.3 (F)

Resting Loss Temp: 65.3 (F)

Hot Soak	0.30	0.40	0.48	0.43	1.14		1.54
WtDiurnal	1.78	3.16	3.81	3.35	20.07		10.99
Multiple	4.24	6.06	6.58	6.21	31.92		
Crankcase	0.01	0.01	0.01	0.01	0.01		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.02	0.03	0.03	0.03	0.04		0.11

-M17 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Oct UP/07. Minimum Temp: 41. (F) Maximum Temp: 69. (F)

Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.30	3.76	5.18	4.19	7.12	0.65	1.08	6.47	5.67	3.922

Exhaust HC:	2.47	2.96	4.19	3.34	5.13	0.65	1.08	6.47	3.85	3.114
Evaporat HC:	0.17	0.23	0.24	0.23	0.91				1.63	0.206
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.64	0.55	0.72	0.60	1.05					0.586
Rsting L HC:	0.01	0.02	0.02	0.02	0.03				0.19	0.015
Exhaust CO:	37.91	44.06	59.32	48.73	95.77	2.16	3.95	28.13	54.53	42.020
Exhaust NOX:	1.50	1.77	2.48	1.99	3.11	1.29	1.46	10.09	0.53	2.348

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	21.64	26.99	38.32	30.45	29.86	2.64	4.36	26.24	32.32	24.760
Idle CO:	324.34	365.85	498.83	406.50	540.88	11.35	20.77	147.91	428.29	340.319
Idle NOX:	5.42	6.40	8.95	7.18	7.05	4.68	5.31	36.64	1.83	8.373

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)

Resting Loss Temp: 54.9 (F)

Hot Soak	0.79	0.87	1.00	0.91	2.03				1.62	
WtDiurnal	2.12	3.72	4.43	3.93	22.09				14.15	
Multiple	3.54	5.36	6.26	5.62	27.08					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.03				0.08	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/07. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.46	3.04	4.22	3.40	5.80	0.65	1.08	6.47	5.41	3.157
Exhaust HC:	2.36	2.89	4.05	3.25	5.34	0.65	1.08	6.47	4.24	3.032
Evaporat HC:	0.07	0.12	0.13	0.12	0.41				1.04	0.097
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.02	0.02	0.02	0.02	0.03					0.018
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.13	0.010

Exhaust CO:	27.44	32.93	43.08	36.03	72.19	2.16	3.95	28.13	50.96	31.394
Exhaust NOX:	1.61	1.92	2.69	2.16	3.31	1.29	1.46	10.09	0.57	2.471

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	20.68	26.38	37.07	29.65	31.09	2.64	4.36	26.24	35.62	24.016
Idle CO:	234.67	273.25	362.33	300.48	407.75	11.35	20.77	147.91	400.23	252.245
Idle NOX:	5.84	6.95	9.72	7.80	7.49	4.68	5.31	36.64	1.96	8.808

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.04	0.03	0.03	0.03	0.07				0.07	
WtDiurnal	1.70	3.04	3.67	3.22	19.71				10.33	
Multiple	2.36	4.05	4.83	4.27	20.38					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.01	0.01	0.01	0.01	0.02				0.05	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of *Gasoline Detergent Additive Regulations (1994)*.

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or *calculated running loss) is 40F or less*, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0*Emission factors are as of July 1st of the indicated calendar year.*

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/07. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.51	3.10	4.33	3.48	5.57	0.65	1.08	6.47	4.40	3.195
Exhaust HC:	2.51	3.09	4.32	3.47	5.56	0.65	1.08	6.47	4.40	3.188
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	28.82	34.80	45.45	38.06	73.85	2.16	3.95	28.13	53.20	32.857
Exhaust NOX:	1.65	1.97	2.76	2.21	3.33	1.29	1.46	10.09	0.58	2.510

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	21.94	28.19	39.55	31.66	32.37	2.64	4.36	26.24	36.95	25.388
Idle CO:	246.46	288.64	382.09	317.21	417.11	11.35	20.77	147.91	417.81	264.439
Idle NOX:	5.97	7.13	9.98	8.00	7.55	4.68	5.31	36.64	2.00	8.950

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/15. Minimum Temp: 16. (F) Maximum Temp: 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.96	3.77	5.26	4.22	5.76	0.67	1.09	6.44	4.91	3.704
Exhaust HC:	2.95	3.76	5.25	4.21	5.75	0.67	1.09	6.44	4.91	3.697

Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	33.24	41.01	53.92	44.92	65.30	2.18	3.93	28.02	60.27	37.226
Exhaust NOX:	1.72	2.09	2.92	2.34	3.13	1.30	1.46	9.13	0.61	2.553

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	25.55	34.02	47.48	38.10	33.47	2.73	4.42	26.11	41.27	29.467
Idle CO:	280.93	330.03	433.97	361.55	368.80	11.47	20.66	147.35	473.37	295.696
Idle NOX:	6.23	7.56	10.55	8.46	7.09	4.71	5.32	33.16	2.11	9.106

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)

Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Feb UP/15. Minimum Temp: 26. (F) Maximum Temp: 43. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.04	3.84	5.41	4.31	5.68	0.67	1.09	6.44	4.60	3.776
Exhaust HC:	3.04	3.83	5.40	4.30	5.67	0.67	1.09	6.44	4.60	3.768
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007

Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	40.75	49.71	66.59	54.83	81.73	2.18	3.93	28.02	67.80	45.069
Exhaust NOX:	1.64	1.97	2.76	2.21	3.08	1.30	1.46	9.13	0.58	2.464

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	26.28	34.63	48.81	38.93	33.03	2.73	4.42	26.11	38.68	30.105
Idle CO:	344.46	400.05	535.93	441.26	461.63	11.47	20.66	147.35	532.50	359.274
Idle NOX:	5.93	7.14	9.98	8.00	6.97	4.71	5.32	33.16	2.02	8.787

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 34.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 34.3 (F)

Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Mar UP/15. Minimum Temp: 36. (F) Maximum Temp: 61. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.13	3.73	5.18	4.17	6.33	0.67	1.09	6.44	5.87	3.809
Exhaust HC:	2.56	3.15	4.47	3.55	4.94	0.67	1.09	6.44	4.05	3.245
Evaporat HC:	0.18	0.22	0.24	0.23	0.78				1.66	0.202
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.38	0.35	0.47	0.39	0.60					0.354
Rsting L HC:	0.01	0.01	0.01	0.01	0.01				0.16	0.008
Exhaust CO:	37.17	44.07	59.55	48.76	79.05	2.18	3.93	28.02	58.16	41.076
Exhaust NOX:	1.52	1.81	2.53	2.03	2.96	1.30	1.46	9.13	0.54	2.334

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	22.17	28.48	40.42	32.10	28.77	2.73	4.42	26.11	34.00	25.558
Idle CO:	314.14	354.66	479.26	392.45	446.46	11.47	20.66	147.35	456.76	326.516

Idle NOX:	5.48	6.55	9.14	7.33	6.70	4.71	5.32	33.16	1.89	8.323

0Evaporative Emissions by Component — Weathered RVP: 13.5 — Hot Soak Temp: 48.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 48.5 (F)

Resting Loss Temp: 48.5 (F)

Hot Soak	0.87	0.81	0.93	0.85	1.79				1.43	
WtDiurnal	2.07	3.65	4.34	3.85	17.21				14.69	
Multiple	3.08	5.20	6.09	5.46	17.58					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.01	0.01	0.01	0.01	0.01				0.07	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Apr UP/15. Minimum Temp: 35. (F) Maximum Temp: 63. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	3.15	3.75	5.20	4.19	6.39	0.67	1.09	6.44	6.15	3.832
Exhaust HC:	2.56	3.14	4.46	3.55	4.93	0.67	1.09	6.44	4.04	3.242
Evaporat HC:	0.19	0.24	0.26	0.25	0.83				1.95	0.220
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.39	0.36	0.48	0.39	0.61					0.362
Rsting L HC:	0.01	0.01	0.01	0.01	0.01				0.16	0.008
Exhaust CO:	37.24	44.14	59.66	48.84	79.18	2.18	3.93	28.02	58.04	41.148
Exhaust NOX:	1.51	1.81	2.52	2.03	2.95	1.30	1.46	9.13	0.54	2.333

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	22.15	28.45	40.38	32.07	28.73	2.73	4.42	26.11	33.95	25.537
Idle CO:	314.79	355.21	480.14	393.11	447.22	11.47	20.66	147.35	455.82	327.109
Idle NOX:	5.48	6.54	9.13	7.33	6.69	4.71	5.32	33.16	1.88	8.318

0Evaporative Emissions by Component — Weathered RVP: 13.5 — Hot Soak Temp: 48.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 48.7 (F)

Resting Loss Temp: 48.7 (F)

Hot Soak	0.90	0.84	0.96	0.87	1.85				1.46	
WtDiurnal	2.41	4.09	4.85	4.30	19.17				17.53	
Multiple	3.70	5.95	6.93	6.23	19.58					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	

Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.01	0.01	0.01	0.01	0.01	0.07

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0May UP/15. Minimum Temp: 44. (F) Maximum Temp: 73. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.50	3.02	4.22	3.39	5.30	0.67	1.09	6.44	4.93	3.177
Exhaust HC:	2.15	2.60	3.71	2.94	4.35	0.67	1.09	6.44	3.75	2.809
Evaporat HC:	0.09	0.13	0.15	0.14	0.52				0.97	0.113
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.25	0.28	0.35	0.30	0.40					0.245
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.21	0.010
Exhaust CO:	30.16	35.08	47.57	38.87	70.70	2.18	3.93	28.02	52.71	33.808
Exhaust NOX:	1.42	1.69	2.36	1.89	2.94	1.30	1.46	9.13	0.52	2.240
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	18.64	23.55	33.52	26.58	25.35	2.73	4.42	26.11	31.49	21.769
Idle CO:	254.90	282.37	382.87	312.85	399.29	11.47	20.66	147.35	413.99	267.043
Idle NOX:	5.14	6.11	8.53	6.84	6.65	4.71	5.32	33.16	1.80	7.982

0Evaporative Emissions by Component Weathered RVP: 9.0 Hot Soak Temp: 58.4 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 58.4 (F)
Resting Loss Temp: 58.4 (F)

Hot Soak	0.26	0.34	0.40	0.36	0.87	1.28
WtDiurnal	1.43	2.60	3.15	2.76	13.19	8.03
Multiple	2.20	3.46	4.12	3.65	19.76	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.01	0.01	0.01	0.01	0.02	0.09

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jun UP/15. Minimum Temp: 46. (F) Maximum Temp: 77. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.31	2.79	3.90	3.13	4.94	0.67	1.09	6.44	4.73	2.981
Exhaust HC:	2.06	2.47	3.52	2.79	4.19	0.67	1.09	6.44	3.65	2.702
Evaporat HC:	0.08	0.13	0.14	0.13	0.47				0.84	0.106
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.17	0.18	0.23	0.20	0.27					0.162
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.24	0.012
Exhaust CO:	28.84	33.27	45.24	36.90	69.22	2.18	3.93	28.02	51.00	32.408
Exhaust NOX:	1.39	1.65	2.30	1.85	2.92	1.30	1.46	9.13	0.51	2.210
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	17.79	22.35	31.85	25.23	24.37	2.73	4.42	26.11	30.71	20.843
Idle CO:	243.75	267.76	364.13	296.99	390.97	11.47	20.66	147.35	400.52	255.583
Idle NOX:	5.04	5.97	8.34	6.69	6.60	4.71	5.32	33.16	1.77	7.875

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 61.9 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 61.9 (F)
Resting Loss Temp: 61.9 (F)

Hot Soak	0.22	0.30	0.34	0.31	0.73	1.34	
WtDiurnal	1.37	2.51	3.04	2.66	12.35	6.63	
Multiple	2.32	3.46	4.07	3.64	19.59		
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.01	0.01	0.01	0.01	0.02	0.10	

-M170 Warning:
+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jul UP/15. Minimum Temp: 52. (F) Maximum Temp: 86. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	

VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.21	2.65	3.68	2.96	4.90	0.67	1.09	6.44	5.18	2.875
Exhaust HC:	1.87	2.23	3.18	2.52	3.86	0.67	1.09	6.44	3.49	2.506
Evaporat HC:	0.12	0.18	0.19	0.18	0.68				1.41	0.151
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.21	0.23	0.29	0.25	0.34					0.204
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.29	0.014
Exhaust CO:	26.32	29.81	40.86	33.16	66.32	2.18	3.93	28.02	47.81	29.740
Exhaust NOX:	1.34	1.58	2.20	1.77	2.87	1.30	1.47	9.11	0.49	2.151
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	16.21	20.16	28.81	22.78	22.48	2.74	4.43	26.11	29.32	19.144
Idle CO:	222.47	239.91	328.81	266.84	374.59	11.47	20.67	147.35	375.50	233.717
Idle NOX:	4.83	5.70	7.96	6.39	6.50	4.72	5.32	33.10	1.71	7.664
0Evaporative Emissions by Component					Weathered RVP: 7.8				Hot Soak Temp: 69.0 (F)	
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)									Running Loss Temp: 69.0 (F)	
									Resting Loss Temp: 69.0 (F)	
Hot Soak	0.38	0.52	0.62	0.55	1.34				1.76	
WtDiurnal	1.77	3.16	3.79	3.34	15.42				11.72	
Multiple	3.72	5.37	5.93	5.53	25.24					
Crankcase	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.02				0.12	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Aug UP/15. Minimum Temp: 53. (F) Maximum Temp: 87. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.20	2.63	3.65	2.94	4.90	0.67	1.09	6.44	5.25	2.863
Exhaust HC:	1.85	2.20	3.14	2.48	3.82	0.67	1.09	6.44	3.47	2.480
Evaporat HC:	0.12	0.19	0.20	0.19	0.72				1.48	0.159
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.21	0.23	0.30	0.25	0.35					0.209
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.30	0.014

Exhaust CO:	25.98	29.34	40.26	32.65	65.92	2.18	3.93	28.02	47.39	29.377
Exhaust NOX:	1.33	1.57	2.19	1.75	2.86	1.30	1.47	9.11	0.49	2.143

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	16.01	19.87	28.41	22.46	22.22	2.74	4.43	26.11	29.13	18.920
Idle CO:	219.58	236.12	324.00	262.74	372.34	11.47	20.67	147.35	372.21	230.749
Idle NOX:	4.81	5.67	7.91	6.34	6.48	4.72	5.32	33.10	1.70	7.635

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 70.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 70.0 (F)

Resting Loss Temp: 70.0 (F)

Hot Soak	0.40	0.57	0.67	0.59	1.45				1.81	
WtDiurnal	1.83	3.27	3.91	3.45	15.83				12.39	
Multiple	3.93	5.69	6.21	5.84	26.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.02				0.12	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Sep UP/15. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.27	2.73	3.80	3.05	4.95	0.67	1.09	6.44	5.14	2.936
Exhaust HC:	1.97	2.35	3.36	2.66	4.03	0.67	1.09	6.44	3.57	2.606
Evaporat HC:	0.11	0.16	0.17	0.16	0.60				1.30	0.135
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.19	0.20	0.26	0.22	0.30					0.183
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.26	0.012
Exhaust CO:	27.62	31.59	43.13	35.09	67.82	2.18	3.93	28.02	49.42	31.115
Exhaust NOX:	1.37	1.61	2.25	1.81	2.89	1.30	1.47	9.11	0.50	2.181

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.01	21.27	30.36	24.02	23.45	2.74	4.43	26.11	30.02	20.007
Idle CO:	233.42	254.27	347.10	282.39	383.02	11.47	20.67	147.35	388.17	244.970
Idle NOX:	4.94	5.84	8.15	6.54	6.54	4.72	5.32	33.10	1.74	7.772

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 65.3 (F)

						Resting Loss Temp: 65.3 (F)
Hot Soak	0.29	0.39	0.46	0.41	0.99	1.54
WtDiurnal	1.70	3.04	3.66	3.22	14.97	10.99
Multiple	3.49	5.02	5.62	5.19	24.40	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.01	0.02	0.02	0.02	0.02	0.11

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Oct UP/15. Minimum Temp: 41. (F) Maximum Temp: 69. (F)

Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	3.25	3.81	5.29	4.26	6.48	0.67	1.09	6.44	5.67	3.912
Exhaust HC:	2.48	3.02	4.31	3.41	4.73	0.67	1.09	6.44	3.85	3.153
Evaporat HC:	0.16	0.22	0.23	0.22	0.79				1.63	0.192
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.60	0.56	0.74	0.61	0.95					0.558
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.19	0.009
Exhaust CO:	38.57	45.03	61.32	49.97	82.16	2.18	3.93	28.02	54.53	42.328
Exhaust NOX:	1.47	1.75	2.44	1.96	2.86	1.30	1.47	9.11	0.53	2.286
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.50	27.34	38.97	30.87	27.52	2.74	4.43	26.11	32.32	24.758
Idle CO:	325.97	362.44	493.52	402.15	464.01	11.47	20.67	147.35	428.29	336.639
Idle NOX:	5.32	6.33	8.84	7.09	6.47	4.72	5.32	33.10	1.83	8.153

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)

Resting Loss Temp: 54.9 (F)

Hot Soak	0.73	0.83	0.94	0.86	1.81	1.62
WtDiurnal	2.02	3.56	4.24	3.76	16.88	14.15
Multiple	3.20	5.13	5.98	5.37	20.30	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.01	0.01	0.01	0.01	0.02	0.08

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Nov UP/15. Minimum Temp: 27. (F) Maximum Temp: 54. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120
Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035
Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.46	3.07	4.27	3.43	5.27	0.67	1.09	6.44	5.41	3.169
Exhaust HC:	2.36	2.93	4.11	3.29	4.89	0.67	1.09	6.44	4.24	3.053
Evaporat HC:	0.07	0.12	0.13	0.12	0.34				1.04	0.092
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.02	0.02	0.02	0.02	0.03					0.018
Rsting L HC:	0.01	0.01	0.01	0.01	0.01				0.13	0.006
Exhaust CO:	27.73	33.39	44.10	36.64	59.77	2.18	3.93	28.02	50.96	31.378
Exhaust NOX:	1.58	1.90	2.65	2.12	3.03	1.30	1.47	9.11	0.57	2.404
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	20.45	26.47	37.20	29.72	28.49	2.74	4.43	26.11	35.62	23.867
Idle CO:	234.41	268.75	354.92	294.86	337.55	11.47	20.67	147.35	400.23	247.750
Idle NOX:	5.72	6.86	9.58	7.69	6.87	4.72	5.32	33.10	1.96	8.571

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)
Resting Loss Temp: 40.4 (F)

Hot Soak	0.03	0.03	0.03	0.03	0.06				0.07	
WtDiurnal	1.63	2.93	3.53	3.10	14.56				10.33	
Multiple	2.26	3.90	4.65	4.12	14.80					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.01	0.01	0.01	0.01	0.01				0.05	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20 6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/15. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	12.5	12.5	12.5		12.5	12.5	12.5	12.5	12.5	
VMT Mix:	0.581	0.204	0.089		0.033	0.002	0.004	0.083	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.51	3.13	4.39	3.51	5.12	0.67	1.09	6.44	4.40	3.214
Exhaust HC:	2.50	3.12	4.38	3.50	5.11	0.67	1.09	6.44	4.40	3.207
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	29.11	35.29	46.54	38.70	61.18	2.18	3.93	28.02	53.20	32.837
Exhaust NOX:	1.62	1.95	2.72	2.16	3.06	1.30	1.47	9.11	0.58	2.442
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.67	28.25	39.63	31.70	29.74	2.74	4.43	26.11	36.95	25.199
Idle CO:	246.03	284.02	374.58	311.46	345.57	11.47	20.67	147.35	417.81	259.701
Idle NOX:	5.85	7.04	9.83	7.88	6.93	4.72	5.32	33.10	2.00	8.707

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

```
MOBILE5B INPUT - 25.0 MPH

1          PROMPT
 UP/SP Project - 25.0 mph
1          TAMFLG - Default tampering rates.
1          SPDFLG - One average speed for all vehicle types.
1          VMFLAG - Use Mobile5 VMT mix.
1          MYMRFG - Use MOBILE5 values for mileage accumulation and registration distributions.
1          NEWFLG - Use MOBILE5 basic exhaust emission rates and Evap. Test procedure
2          IMFLAG - One user specified program.
1          ALHFLG - No corrections for A/C useage, load, trailers, humidity.
2          ATPFLG - User specifies ATP.
5          RLFLAG - No refueling emission factors calculated.
1          LOCFLG - LAP record will appear once for each scenario.
2          TEMFLG - Input value of ambient temperature used to correct emission factors for temperature effects.
3          OUTFMT - 112 column descriptive
4          PRTFLG - Print exhaust HC, CO, and NOx results.
2          IDLFLG - Idle emission factors calculated and printed.
3          NMHFLG - Calculate emissions for volatile organic hydrocarbons.
3          HCFLAG - Print sum (excludes refueling) and component; evap in gms.
88 24 68 93 02 02  95 211 2221 2111                    I/M - Basic I/M
88 68 93 2221 21 095. 22212222                         ATP - ATP program
2 95 25.0 25.7 20.6 27.3 20.6  1                       Scenario description record
Jan UP/95.          16.  36. 15.0 15.0 92 2 1 1 1      Local Area Parameter record
.88  .12  .027 .035 1                                  Oxygenated fuels descriptive record.
2 95 25.0 34.3 20.6 27.3 20.6  1                       Scenario description record
Feb UP/95.          26.  43. 15.0 15.0 92 1 1 1 1      Local Area Parameter record
2 95 25.0 48.5 20.6 27.3 20.6  1                       Scenario description record
Mar UP/95.          36.  61. 13.5 13.5 92 1 1 1 1      Local Area Parameter record
2 95 25.0 48.7 20.6 27.3 20.6  1                       Scenario description record
Apr UP/95.          35.  63. 13.5 13.5 92 1 1 1 1      Local Area Parameter record
2 95 25.0 58.4 20.6 27.3 20.6  1                       Scenario description record
May UP/95.          44.  73.  9.0  9.0 92 1 1 1 1      Local Area Parameter record
2 95 25.0 61.9 20.6 27.3 20.6  1                       Scenario description record
Jun UP/95.          46.  77.  7.8  7.8 92 1 1 1 1      Local Area Parameter record
2 95 25.0 69.0 20.6 27.3 20.6  7                       Scenario description record
Jul UP/95.          52.  86.  7.8  7.8 92 1 1 1 1      Local Area Parameter record
2 95 25.0 70.0 20.6 27.3 20.6  7                       Scenario description record
Aug UP/95.          53.  87.  7.8  7.8 92 1 1 1 1      Local Area Parameter record
2 95 25.0 65.3 20.6 27.3 20.6  7                       Scenario description record
Sep UP/95.          47.  84.  7.8  7.8 92 1 1 1 1      Local Area Parameter record
2 95 25.0 54.9 20.6 27.3 20.6  7                       Scenario description record
Oct UP/95.          41.  69. 11.5 11.5 92 1 1 1 1      Local Area Parameter record
2 95 25.0 40.4 20.6 27.3 20.6  7                       Scenario description record
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Nov UP/95.            27.  54. 13.5 13.5 92 2 1 1 1
.88  .12  .027 .035 1
2 95 25.0 36.5 20.6 27.3 20.6  7
Dec UP/95.            26.  48. 15.0 15.0 92 2 1 1 1
.88  .12  .027 .035 1
2 00 25.0 25.7 20.6 27.3 20.6  1
Jan UP/00.            16.  36. 15.0 15.0 92 2 1 1 1
.88  .12  .027 .035 1
2 00 25.0 34.3 20.6 27.3 20.6  1
Feb UP/00.            26.  43. 15.0 15.0 92 1 1 1 1
2 00 25.0 48.5 20.6 27.3 20.6  1
Mar UP/00.            36.  61. 13.5 13.5 92 1 1 1 1
2 00 25.0 48.7 20.6 27.3 20.6  1
Apr UP/00.            35.  63. 13.5 13.5 92 1 1 1 1
2 00 25.0 58.4 20.6 27.3 20.6  1
May UP/00.            44.  73.  9.0  9.0 92 1 1 1 1
2 00 25.0 61.9 20.6 27.3 20.6  1
Jun UP/00.            46.  77.  7.8  7.8 92 1 1 1 1
2 00 25.0 69.0 20.6 27.3 20.6  7
Jul UP/00.            52.  86.  7.8  7.8 92 1 1 1 1
2 00 25.0 70.0 20.6 27.3 20.6  7
Aug UP/00.            53.  87.  7.8  7.8 92 1 1 1 1
2 00 25.0 65.3 20.6 27.3 20.6  7
Sep UP/00.            47.  84.  7.8  7.8 92 1 1 1 1
2 00 25.0 54.9 20.6 27.3 20.6  7
Oct UP/00.            41.  69. 11.5 11.5 92 1 1 1 1
2 00 25.0 40.4 20.6 27.3 20.6  7
Nov UP/00.            27.  54. 13.5 13.5 92 2 1 1 1
.88  .12  .027 .035 1
2 00 25.0 36.5 20.6 27.3 20.6  7
Dec UP/00.            26.  48. 15.0 15.0 92 2 1 1 1
.88  .12  .027 .035 1
2 07 25.0 25.7 20.6 27.3 20.6  1
Jan UP/07.            16.  36. 15.0 15.0 92 2 1 1 1
.88  .12  .027 .035 1
2 07 25.0 34.3 20.6 27.3 20.6  1
Feb UP/07.            26.  43. 15.0 15.0 92 1 1 1 1
2 07 25.0 48.5 20.6 27.3 20.6  1
Mar UP/07.            36.  61. 13.5 13.5 92 1 1 1 1
2 07 25.0 48.7 20.6 27.3 20.6  1
Apr UP/07.            35.  63. 13.5 13.5 92 1 1 1 1
2 07 25.0 58.4 20.6 27.3 20.6  1
May UP/07.            44.  73.  9.0  9.0 92 1 1 1 1
2 07 25.0 61.9 20.6 27.3 20.6  1
Jun UP/07.            46.  77.  7.8  7.8 92 1 1 1 1
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Local Area Parameter record
Oxygenated fuels descriptive record.
Scenario description record
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2 07 25.0 69.0 20.6 27.3 20.6  7                        Scenario description record
Jul UP/07.          52.  86.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 07 25.0 70.0 20.6 27.3 20.6  7                        Scenario description record
Aug UP/07.          53.  87.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 07 25.0 65.3 20.6 27.3 20.6  7                        Scenario description record
Sep UP/07.          47.  84.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 07 25.0 54.9 20.6 27.3 20.6  7                        Scenario description record
Oct UP/07.          41.  69. 11.5 11.5 92 1 1 1 1       Local Area Parameter record
2 07 25.0 40.4 20.6 27.3 20.6  7                        Scenario description record
Nov UP/07.          27.  54. 13.5 13.5 92 2 1 1 1       Local Area Parameter record
.88  .12  .027 .035 1                                   Oxygenated fuels descriptive record.
2 07 25.0 36.5 20.6 27.3 20.6  7                        Scenario description record
Dec UP/07.          26.  48. 15.0 15.0 92 2 1 1 1       Local Area Parameter record
.88  .12  .027 .035 1                                   Oxygenated fuels descriptive record.
2 15 25.0 25.7 20.6 27.3 20.6  1                        Scenario description record
Jan UP/15.          16.  36. 15.0 15.0 92 2 1 1 1       Local Area Parameter record
.88  .12  .027 .035 1                                   Oxygenated fuels descriptive record.
2 15 25.0 34.3 20.6 27.3 20.6  1                        Scenario description record
Feb UP/15.          26.  43. 15.0 15.0 92 1 1 1 1       Local Area Parameter record
2 15 25.0 48.5 20.6 27.3 20.6  1                        Scenario description record
Mar UP/15.          36.  61. 13.5 13.5 92 1 1 1 1       Local Area Parameter record
2 15 25.0 48.7 20.6 27.3 20.6  1                        Scenario description record
Apr UP/15.          35.  63. 13.5 13.5 92 1 1 1 1       Local Area Parameter record
2 15 25.0 58.4 20.6 27.3 20.6  1                        Scenario description record
May UP/15.          44.  73.  9.0  9.0 92 1 1 1 1       Local Area Parameter record
2 15 25.0 61.9 20.6 27.3 20.6  1                        Scenario description record
Jun UP/15.          46.  77.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 15 25.0 69.0 20.6 27.3 20.6  7                        Scenario description record
Jul UP/15.          52.  86.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 15 25.0 70.0 20.6 27.3 20.6  7                        Scenario description record
Aug UP/15.          53.  87.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 15 25.0 65.3 20.6 27.3 20.6  7                        Scenario description record
Sep UP/15.          47.  84.  7.8  7.8 92 1 1 1 1       Local Area Parameter record
2 15 25.0 54.9 20.6 27.3 20.6  7                        Scenario description record
Oct UP/15.          41.  69. 11.5 11.5 92 1 1 1 1       Local Area Parameter record
2 15 25.0 40.4 20.6 27.3 20.6  7                        Scenario description record
Nov UP/15.          27.  54. 13.5 13.5 92 2 1 1 1       Local Area Parameter record
.88  .12  .027 .035 1                                   Oxygenated fuels descriptive record.
2 15 25.0 36.5 20.6 27.3 20.6  7                        Scenario description record
Dec UP/15.          26.  48. 15.0 15.0 92 2 1 1 1       Local Area Parameter record
.88  .12  .027 .035 1                                   Oxygenated fuels descriptive record.
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MOBILE5B OUTPUT - 25.0 MPH

1 UP/SP Project - 25.0 mph
 MOBILE5b (14-Sep-96)
0
-M170 Warning:
+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).
-M 83 Comment:
+ One or more evaporative temperatures (input daily
maximum, input ambient, calculated hot soak, and/or
calculated running loss) is 40F or less, or input
daily minimum is 25F or less; no evaporative emission
factors (hot soak, diurnal, running loss, or resting
loss) will be calculated.
0I/M program selected:

0 Start year (January 1): 1988
Pre-1981 MYR stringency rate: 24%
First model year covered: 1968
Last model year covered: 1993
Waiver rate (pre-1981): 2.%
Waiver rate (1981 and newer): 2.%
Compliance Rate: 95.%
Inspection type: Computerized Test and Repair
Effectiveness - HC: 0.50 CO: 0.50 NOx: 0.50
Inspection frequency Annual
Vehicle types covered: LDGV - Yes
LDGT1 - Yes
LDGT2 - Yes
HDGV - No
1981 & later MYR test type: 2500 rpm / Idle
Cutpoints, HC: 220.000 CO: 1.200 NOx: 999.000
High alt, Annl and Bien Insp Freq TECH 1 & 2 I/M cred data
Annl Insp Freq & TECH 4+ I/M credit 2500/Idle test data
0Functional Check Program Description:

0Check	Start (Jan1)	Model Yrs Covered	Vehicle Classes Covered LDGV	LDGT1	LDGT2	HDGV	Inspection Type	Freq	Comp Rate	Eff Adj
ATP	1988	1968-1993	Yes	Yes	Yes	No	Test & Repair	Annual	95.0%	0.00

0Air pump system disablements Yes Catalyst removals: Yes
Fuel inlet restrictor disablements: Yes Tailpipe lead deposit test: No
EGR disablement: Yes Evaporative system disablements: Yes
PCV system disablements: Yes Missing gas caps: Yes

0VOC HC emission factors include all evaporative HC emission factors, except for refueling emissions.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/95. Minimum Temp: 16. (F) Maximum Temp: 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.29	3.10	4.37	3.51	5.61	0.76	1.30	4.75	3.40	2.864
Exhaust HC:	2.28	3.09	4.36	3.50	5.58	0.76	1.30	4.75	3.40	2.856
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	24.90	33.29	45.59	37.20	99.76	1.78	3.32	15.64	41.12	29.888
Exhaust NOX:	2.24	2.34	2.81	2.49	4.75	1.51	1.73	13.99	0.84	3.082
Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	39.12	49.88	68.21	55.72	73.99	4.99	8.54	31.20	43.15	43.947
Idle CO:	434.39	578.13	794.21	646.94	1145.29	18.34	34.21	161.31	476.17	493.960
Idle NOX:	8.09	8.27	9.78	8.75	9.62	7.18	8.23	66.37	2.14	11.794

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)

Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		0.00
WtDiurnal	0.00	0.00	0.00	0.00	0.00		0.00
Multiple	0.00	0.00	0.00	0.00	0.00		
Crankcase	0.01	0.01	0.01	0.01	0.03		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.00	0.00	0.00	0.00	0.00		0.00

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 85 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or

calculated running loss) is 40F or less, or input
daily minimum is 25F or less: no evaporative emission
factors (hot soak, diurnal, running loss, or resting
loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Feb UP/95. Minimum Temp: 26. (F) Maximum Temp: 43. (F)
Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.24	2.99	4.18	3.37	5.47	0.76	1.30	4.75	3.19	2.789
Exhaust HC:	2.23	2.98	4.16	3.36	5.43	0.76	1.30	4.75	3.19	2.782
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	29.74	39.84	54.54	44.52	120.62	1.78	3.32	15.64	46.25	35.563
Exhaust NOX:	2.11	2.22	2.67	2.36	4.66	1.51	1.73	13.99	0.81	2.965
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	38.27	48.07	65.29	53.56	72.10	4.99	8.54	31.20	40.44	42.762
Idle CO:	522.40	698.28	962.72	782.49	1384.85	18.34	34.21	161.31	535.65	593.187
Idle NOX:	7.62	7.83	9.28	8.29	9.43	7.18	8.23	66.37	2.05	11.374

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 34.3 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 34.3 (F)
Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		0.00
WtDiurnal	0.00	0.00	0.00	0.00	0.00		0.00
Multiple	0.00	0.00	0.00	0.00	0.00		
Crankcase	0.01	0.01	0.01	0.01	0.03		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.00	0.00	0.00	0.00	0.00		0.00

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

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0Mar UP/95. Minimum Temp: 36. (F) Maximum Temp: 61. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.32	2.92	4.15	3.32	7.00	0.76	1.30	4.75	4.62	2.885
Exhaust HC:	1.80	2.40	3.41	2.72	4.91	0.76	1.30	4.75	2.80	2.319
Evaporat HC:	0.28	0.35	0.50	0.40	1.54				1.66	0.343
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.21	0.14	0.21	0.17	0.47					0.193
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.16	0.031
Exhaust CO:	25.68	34.46	47.63	38.65	114.66	1.78	3.32	15.64	39.67	31.217
Exhaust NOX:	1.93	2.04	2.46	2.17	4.48	1.51	1.73	13.99	0.75	2.791
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	30.71	38.77	53.29	43.39	65.58	4.99	8.54	31.20	35.55	35.066
Idle CO:	451.20	606.45	844.18	682.15	1316.37	18.34	34.21	161.31	459.46	519.043
Idle NOX:	6.95	7.18	8.53	7.61	9.08	7.18	8.23	66.37	1.91	10.753

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.5 (F)

Resting Loss Temp: 48.5 (F)

Hot Soak	1.21	1.00	1.23	1.07	2.68				1.42	
WtDiurnal	3.81	6.42	11.92	8.07	43.27				14.68	
Multiple	6.24	9.63	14.54	11.11	44.37					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.05				0.07	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Apr UP/95. Minimum Temp: 35. (F) Maximum Temp: 63. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.35	2.96	4.19	3.35	7.11	0.76	1.30	4.75	4.91	2.919

Exhaust HC:	1.79	2.40	3.40	2.72	4.94	0.76	1.30	4.75	2.80	2.315
Evaporat HC:	0.31	0.38	0.54	0.43	1.63				1.95	0.376
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.22	0.15	0.22	0.17	0.48					0.197
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.16	0.031
Exhaust CO:	25.69	34.45	47.61	38.64	114.63	1.78	3.32	15.64	39.59	31.216
Exhaust NOX:	1.93	2.04	2.45	2.17	4.48	1.51	1.73	13.99	0.75	2.789

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	30.66	38.70	53.19	43.31	65.50	4.99	8.54	31.20	35.50	35.007
Idle CO:	451.27	606.34	843.95	682.01	1315.98	18.34	34.21	161.31	458.52	519.034
Idle NOX:	6.94	7.17	8.52	7.60	9.07	7.18	8.23	66.37	1.90	10.746

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.7 (F)

Resting Loss Temp: 48.7 (F)

Hot Soak	1.24	1.03	1.26	1.10	2.75				1.45	
WtDiurnal	4.53	7.19	12.7)	8.88	46.78				17.52	
Multiple	7.59	11.10	16.16	12.62	48.10					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.05				0.07	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0May UP/95. Minimum Temp: 44. (F) Maximum Temp: 73. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25 0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.84	2.44	3.54	2.79	6.36	0.76	1.30	4.75	3.79	2.418
Exhaust HC:	1.49	2.02	2.92	2.30	4.60	0.76	1.30	4.75	2.60	2.004
Evaporat HC:	0.16	0.24	0.40	0.30	1.34				0.97	0.226
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.15	0.13	0.18	0.15	0.35					0.147
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.21	0.041
Exhaust CO:	20.83	28.74	40.81	32.58	108.92	1.78	3.32	15.64	35.96	26.342
Exhaust NOX:	1.80	1.92	2.32	2.05	4.40	1.51	1.73	13.99	0.72	2.673

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	25.52	32.57	45.48	36.68	61.04	4.99	8.54	31.20	32.92	29.851
Idle CO:	367.46	510.02	724.36	578.27	1250.51	18.34	34.21	161.31	416.44	436.351
Idle NOX:	6.47	6.74	8.04	7.15	8.92	7.18	8.23	66.37	1.82	10.328

0Evaporative Emissions by Component — Weathered RVP: 9.0 — Hot Soak Temp: 58.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 58.4 (F)

Resting Loss Temp: 58.4 (F)

Hot Soak	0.38	0.46	0.66	0.52	2.15				1.28	
WtDiurnal	2.71	4.78	10.43	6.48	39.77				8.02	
Multiple	5.88	9.12	13.16	10.34	45.41					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.09	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jun UP/95. Minimum Temp: 46. (F) Maximum Temp: 77. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.633	0.180	0.084		0.031	0.004	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.73	2.30	3.35	2.63	6.01	0.76	1.30	4.75	3.61	2.291
Exhaust HC:	1.41	1.92	2.78	2.19	4.49	0.76	1.30	4.75	2.53	1.922
Evaporat HC:	0.15	0.23	0.39	0.28	1.20				0.84	0.212
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.12	0.10	0.13	0.11	0.24					0.112
Rsting L HC:	0.05	0.04	0.04	0.04	0.08				0.24	0.045
Exhaust CO:	19.68	27.36	39.13	31.11	107.34	1.78	3.32	15.64	34.79	25.173
Exhaust NOX:	1.76	1.88	2.27	2.00	4.37	1.51	1.73	13.99	0.71	2.634

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	24.20	30.94	43.40	34.90	59.59	4.99	8.54	31.20	32.12	28.499
Idle CO:	347.71	486.87	695.33	553.25	1232.34	18.34	34.21	161.31	402.89	416.604
Idle NOX:	6.32	6.59	7.88	7.00	8.85	7.18	8.23	66.37	1.79	10.191

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 61.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 61.9 (F)

Resting Loss Temp: 61.9 (F)

Hot Soak	0.32	0.39	0.52	0.43	1.52				1.34	
WtDiurnal	2.57	4.55	10.28	6.28	39.46				6.62	

Multiple	6.01	9.34	13.38	10.55	44.59					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.06	0.05	0.05	0.05	0.08				0.10	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jul UP/95. Minimum Temp: 52. (F) Maximum Temp: 86. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.66	2.14	3.11	2.45	5.83	0.76	1.28	4.67	4.08	2.196
Exhaust HC:	1.25	1.67	2.46	1.92	4.09	0.76	1.28	4.67	2.39	1.732
Evaporat HC:	0.19	0.29	0.43	0.33	1.34				1.41	0.262
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.16	0.13	0.17	0.15	0.31					0.148
Rsting L HC:	0.06	0.05	0.05	0.05	0.09				0.29	0.055
Exhaust CO:	17.05	23.82	34.42	27.19	99.53	1.75	3.26	15.52	32.62	22.232
Exhaust NOX:	1.66	1.79	2.21	1.92	4.27	1.50	1.72	13.54	0.68	2.528
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.41	26.95	38.34	30.57	54.27	4.97	8.37	30.68	30.23	25.407
Idle CO:	302.86	425.43	612.98	484.97	1142.71	18.10	33.66	160.06	377.73	367.513
Idle NOX:	5.96	6.27	7.67	6.71	8.64	7.11	8.15	64.25	1.73	9.794

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)
Resting Loss Temp: 69.0 (F)

Hot Soak	0.48	0.58	0.77	0.64	2.01				1.76	
WtDiurnal	3.14	5.27	10.41	6.81	39.20				11.72	
Multiple	8.32	12.60	16.00	13.62	46.90					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.07	0.06	0.07	0.07	0.09				0.12	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of

Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Aug UP/95. Minimum Temp: 53. (F) Maximum Temp: 87. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.66	2.14	3.10	2.44	5.84	0.76	1.28	4.67	4.15	2.194
Exhaust HC:	1.23	1.65	2.43	1.90	4.06	0.76	1.28	4.67	2.37	1.713
Evaporat HC:	0.20	0.30	0.44	0.34	1.37				1.48	0.271
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.16	0.14	0.18	0.15	0.32					0.153
Rsting L HC:	0.06	0.06	0.05	0.05	0.09				0.30	0.056
Exhaust CO:	16.76	23.47	33.99	26.81	99.12	1.75	3.26	15.52	32.33	21.933
Exhaust NOX:	1.65	1.77	2.19	1.91	4.26	1.50	1.72	13.54	0.68	2.518
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	21.11	26.58	37.85	30.16	53.90	4.97	8.37	30.68	30.05	25.097
Idle CO:	297.78	419.62	605.62	478.67	1137.95	18.10	33.66	160.06	374.41	362.466
Idle NOX:	5.92	6.23	7.62	6.67	8.62	7.11	8.15	64.25	1.72	9.757

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 70.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 70.0 (F)

Resting Loss Temp: 70.0 (F)

Hot Soak	0.51	0.62	0.81	0.67	2.09				1.81	
WtDiurnal	3.26	5.44	10.54	6.97	39.35				12.38	
Multiple	8.73	13.14	16.44	14.13	47.33					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.07	0.07	0.07	0.07	0.10				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Sep UP/95. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.69	2.19	3.19	2.51	5.81	0.76	1.28	4.67	4.01	2.227
Exhaust HC:	1.32	1.76	2.58	2.02	4.20	0.76	1.28	4.67	2.44	1.805
Evaporat HC:	0.18	0.27	0.41	0.31	1.27				1.30	0.244
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.14	0.12	0.15	0.13	0.27					0.129
Rsting L HC:	0.05	0.05	0.05	0.05	0.08				0.26	0.049
Exhaust CO:	18.16	25.13	36.04	28.59	101.09	1.75	3.26	15.52	33.72	23.360
Exhaust NOX:	1.70	1.83	2.25	1.96	4.30	1.50	1.72	13.54	0.69	2.567
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.58	28.40	40.22	32.15	55.70	4.97	8.37	30.68	30.96	26.614
Idle CO:	322.02	447.45	640.92	508.87	1160.54	18.10	33.66	160.06	390.46	386.577
Idle NOX:	6.11	6.41	7.84	6.87	8.71	7.11	8.15	64.25	1.76	9.931

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 65.3 (F)

Resting Loss Temp: 65.3 (F)

Hot Soak	0.39	0.47	0.62	0.51	1.73				1.54	
WtDiurnal	3.02	5.10	10.28	6.65	39.03				10.98	
Multiple	7.87	12.01	15.51	13.06	46.42					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.06	0.06	0.06	0.06	0.08				0.11	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Oct UP/95. Minimum Temp: 41. (F) Maximum Temp: 69. (F)

Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.31	2.80	3.99	3.18	6.93	0.76	1.28	4.67	4.45	2.836
Exhaust HC:	1.66	2.18	3.12	2.48	4.56	0.76	1.28	4.67	2.63	2.157
Evaporat HC:	0.26	0.35	0.48	0.39	1.55				1.63	0.327
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Runing L HC:	0.35	0.24	0.35	0.27	0.75					0.316
Rsting L HC:	0.04	0.04	0.03	0.04	0.06				0.19	0.037
Exhaust CO:	24.86	32.74	44.98	36.62	108.58	1.75	3.26	15.52	37.20	29.970
Exhaust NOX:	1.84	1.95	2.40	2.10	4.33	1.50	1.72	13.54	0.73	2.692

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	28.46	35.18	48.76	39.49	60.51	4.97	8.37	30.68	33.33	32.435
Idle CO:	438.03	576.25	800.73	647.51	1246.59	18.10	33.66	160.06	430.82	499.459
Idle NOX:	6.62	6.88	8.37	7.35	8.78	7.11	8.15	64.25	1.85	10.381

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)

Resting Loss Temp: 54.9 (F)

Hot Soak	1.02	1.03	1.25	1.09	2.83				1.61	
WtDiurnal	3.60	5.91	11.07	7.46	41.29				14.15	
Multiple	7.38	11.15	14.91	12.28	46.23					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.06				0.08	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/95. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	IDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25 0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.86	2.52	3.71	2.90	5.74	0.76	1.28	4.67	4.07	2.437
Exhaust HC:	1.70	2.30	3.34	2.63	4.83	0.76	1.28	4.67	2.90	2.232
Evaporat HC:	0.12	0.19	0.34	0.24	0.85				1.04	0.172
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.01	0.01	0.01	0.01	0.02					0.009
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.13	0.024
Exhaust CO:	19.75	26.36	36.70	29.64	89.48	1.75	3.26	15.52	34.76	24.289
Exhaust NOX:	2.01	2.12	2.61	2.28	4.55	1.50	1.72	13.54	0.78	2.854

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.16	37.18	52.12	41.92	64.05	4.97	8.37	30.68	36.73	33.655
Idle CO:	345.88	459.05	640.81	516.75	1027.31	18.10	33.66	160.06	402.60	399.686
Idle NOX:	7.23	7.50	9.12	8.01	9.21	7.11	8.15	64.25	1.98	10.955

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.05	0.04	0.05	0.04	0.12				0.07	
WtDiurnal	2.91	4.94	10.15	6.50	38.90				10.32	
Multiple	4.27	6.89	11.72	8.34	39.79					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.03	0.03	0.03	0.03	0.04				0.05	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 1995 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/95. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.631	0.181	0.084		0.031	0.003	0.002	0.061	0.007	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.83	2.47	3.57	2.82	4.99	0.76	1.28	4.67	3.01	2.368
Exhaust HC:	1.82	2.46	3.55	2.81	4.96	0.76	1.28	4.67	3.01	2.361
Evaporat HC:	0.01	0.01	0.01	0.01	0.03				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	20.87	27.77	38.49	31.17	90.99	1.75	3.26	15.52	36.29	25.458

Exhaust NOX:	2.06	2.18	2.67	2.33	4.59	1.50	1.72	13.54	0.80	2.903

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	31.24	39.77	55.53	44.77	65.85	4.97	8.37	30.68	38.10	35.790
Idle CO:	365.31	482.85	671.54	542.75	1044.59	18.10	33.66	160.06	420.28	419.491
Idle NOX:	7.42	7.68	9.34	8.21	9.30	7.11	8.15	64.25	2.02	11.133

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.03				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/00. Minimum Temp: 16. (F) Maximum Temp: 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.91	2.47	3.44	2.77	3.66	0.59	0.91	4.20	3.26	2.363
Exhaust HC:	1.90	2.46	3.43	2.76	3.64	0.59	0.91	4.20	3.26	2.357
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	20.04	25.91	34.52	28.58	62.23	1.44	2.53	14.76	40.87	23.435
Exhaust NOX:	1.93	2.16	2.93	2.40	4.20	1.25	1.37	10.60	0.83	2.706

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.31	38.31	52.71	42.78	48.35	3.89	6.00	27.59	41.27	33.517
Idle CO:	311.82	401.48	532.59	442.20	714.43	14.90	26.13	152.19	473.37	349.786
Idle NOX:	7.02	7.92	10.76	8.80	8.51	5.94	6.51	50.30	2.11	10.455

0Evaporative Emissions by Component — Weathered RVP: 15.0 — Hot Soak Temp: 25.7 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 25.7 (F)

Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Feb UP/00. Minimum Temp: 26. (F) Maximum Temp: 43. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.92	2.43	3.38	2.72	3.58	0.59	0.91	4.20	3.05	2.353
Exhaust HC:	1.92	2.42	3.37	2.72	3.57	0.59	0.91	4.20	3.05	2.347
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000

Exhaust CO:	24.25	31.21	41.88	34.52	75.81	1.44	2.53	14.76	45.98	28.128
Exhaust NOX:	1.82	2.04	2.77	2.27	4.13	1.25	1.37	10.60	0.80	2.603

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	29.44	37.66	51.78	42.05	47.34	3.89	6.00	27.59	38.68	33.346
Idle CO:	378.21	486.13	650.38	537.15	870.31	14.90	26.13	152.19	532.50	422.126
Idle NOX:	6.65	7.48	10.16	8.31	8.37	5.94	6.51	50.30	2.02	10.083

0Evaporative Emissions by Component — Weathered RVP: 15.0 — Hot Soak Temp: 34.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 34.3 (F)

Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		
WtDiurnal	0.00	0.00	0.00	0.00	0.00	0.00	
Multiple	0.00	0.00	0.00	0.00	0.00	0.00	
Crankcase	0.01	0.01	0.01	0.01	0.02		
Refuel	0.00	0.00	0.00	0.00	0.00	0.00	
Resting	0.00	0.00	0.00	0.00	0.00		
						0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Mar UP/00. Minimum Temp: 36. (F) Maximum Temp: 61. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	2.03	2.39	3.30	2.67	4.72	0.59	0.91	4.20	4.50	2.452
Exhaust HC:	1.58	1.95	2.75	2.20	3.21	0.59	0.91	4.20	2.68	1.983
Evaporat HC:	0.24	0.27	0.33	0.29	1.12				1.66	0.270
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.20	0.14	0.20	0.16	0.35					0.176
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.16	0.023
Exhaust CO:	21.51	27.30	36.94	30.29	72.49	1.44	2.53	14.76	39.44	25.124
Exhaust NOX:	1.67	1.86	2.54	2.07	3.99	1.25	1.37	10.60	0.74	2.453

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	24.20	30.35	42.11	34.00	42.59	3.89	6.00	27.59	34.00	27.718
Idle CO:	335.09	426.07	574.83	472.28	832.21	14.90	26.13	152.19	456.76	375.984
Idle NOX:	6.10	6.83	9.29	7.60	8.08	5.94	6.51	50.30	1.89	9.538

0Evaporative Emissions by Component — Weathered RVP: 13.5 — Hot Soak Temp: 48.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 48.5 (F)

						Resting Loss Temp:	48.5 (F)
Hot Soak	1.17	0.93	1.08	0.97	2.25	1.43	
WtDiurnal	2.80	4.67	7.09	5.38	31.72	14.69	
Multiple	4.35	6.83	9.21	7.53	32.99		
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.03	0.03	0.03	0.03	0.04	0.07	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Apr UP/00. Minimum Temp: 35. (F) Maximum Temp: 63. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.06	2.42	3.33	2.70	4.81	0.59	0.91	4.20	4.79	2.480
Exhaust HC:	1.58	1.95	2.75	2.20	3.21	0.59	0.91	4.20	2.68	1.980
Evaporat HC:	0.26	0.29	0.36	0.31	1.20				1.95	0.296
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.20	0.15	0.20	0.16	0.36					0.180
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.16	0.024
Exhaust CO:	21.54	27.32	36.97	30.31	72.51	1.44	2.53	14.76	39.36	25.147
Exhaust NOX:	1.67	1.86	2.54	2.07	3.98	1.25	1.37	10.60	0.74	2.451
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	24.17	30.31	42.04	33.95	42.54	3.89	6.00	27.59	33.95	27.684
Idle CO:	335.49	426.35	575.22	472.59	832.48	14.90	26.13	152.19	455.82	376.319
Idle NOX:	6.09	6.82	9.28	7.59	8.07	5.94	6.51	50.30	1.88	9.532

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.7 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.7 (F)
Resting Loss Temp: 48.7 (F)

Hot Soak	1.20	0.95	1.11	1.00	2.31	1.46	
WtDiurnal	3.29	5.26	7.76	5.99	34.60	17.53	
Multiple	5.38	7.86	10.36	8.59	36.12		
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.03	0.03	0.03	0.03	0.04	0.07	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0May UP/00. Minimum Temp: 44. (F) Maximum Temp: 73. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.60	1.94	2.73	2.19	4.16	0.59	0.91	4.20	3.67	2.031
Exhaust HC:	1.31	1.61	2.30	1.83	2.94	0.59	0.91	4.20	2.48	1.708
Evaporat HC:	0.12	0.17	0.24	0.19	0.91				0.97	0.159
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.14	0.13	0.17	0.14	0.26					0.133
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.21	0.031
Exhaust CO:	17.33	22.12	30.42	24.70	67.65	1.44	2.53	14.76	35.75	20.831
Exhaust NOX:	1.56	1.74	2.37	1.94	3.95	1.25	1.37	10.60	0.71	2.346
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	20.16	25.12	35.16	28.24	39.00	3.89	6.00	27.59	31.49	23.509
Idle CO:	270.67	348.23	475.89	387.88	776.70	14.90	26.13	152.19	413.99	310.993
Idle NOX:	5.70	6.37	8.68	7.09	8.00	5.94	6.51	50.30	1.80	9.150

0Evaporative Emissions by Component Weathered RVP: 9.0 Hot Soak Temp: 58.4 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 58.4 (F)
Resting Loss Temp: 58.4 (F)

Hot Soak	0.33	0.39	0.50	0.42	1.57		
WtDiurnal	1.89	3.32	5.73	4.03	27.93	1.28	
Multiple	3.82	5.48	7.50	6.07	36.74	8.03	
Crankcase	0.01	0.01	0.01	0.01	0.02		
Refuel	0.00	0.00	0.00	0.00	0.00	0.00	
Resting	0.04	0.04	0.04	0.04	0.05		
						0.09	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jun UP/00. Minimum Temp: 46. (F) Maximum Temp: 77. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.616	0.191	0.086		0.031	0.002	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.50	1.82	2.56	2.05	3.91	0.59	0.91	4.20	3.50	1.921
Exhaust HC:	1.25	1.53	2.19	1.73	2.86	0.59	0.91	4.20	2.42	1.639
Evaporat HC:	0.11	0.16	0.23	0.18	0.81				0.84	0.149
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.11	0.09	0.12	0.10	0.18					0.098
Rsting L HC:	0.04	0.03	0.03	0.03	0.06				0.24	0.034
Exhaust CO:	16.45	20.98	28.99	23.47	66.56	1.44	2.53	14.76	34.58	19.908
Exhaust NOX:	1.53	1.70	2.32	1.89	3.92	1.25	1.37	10.60	0.70	2.313
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	19.16	23.79	33.41	26.78	37.92	3.89	6.00	27.59	30.71	22.455
Idle CO:	257.03	331.00	454.24	369.28	764.10	14.90	26.13	152.19	400.52	296.976
Idle NOX:	5.57	6.23	[illegible]9	6.93	7.95	5.94	6.51	50.30	1.77	9.027

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 61.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/gal, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 61.9 (F)

Resting Loss Temp: 61.9 (F)

Hot Soak	0.27	0.34	0.41	0.36	1.16				1.34	
WtDiurnal	1.80	3.17	5.60	3.88	27.37				6.63	
Multiple	4.17	5.78	7.85	6.39	35.41					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.04	0.04	0.04	0.04	0.06				0.10	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jul UP/00. Minimum Temp: 52. (F) Maximum Temp: 86. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.46	1.74	2.4[illegible]	1.96	3.88	0.57	0.87	4.18	4.01	1.872

Exhaust HC:	1.13	1.36	1.96	1.54	2.58	0.57	0.87	4.18	2.31	1.502
Evaporat HC:	0.16	0.23	0.28	0.24	0.99				1.41	0.203
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.14	0.12	0.15	0.13	0.23					0.127
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.29	0.040
Exhaust CO:	14.64	18.41	25.80	20.70	61.04	1.40	2.44	14.71	32.42	17.844
Exhaust NOX:	1.45	1.61	2.20	1.79	3.82	1.22	1.33	10.29	0.67	2.218

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.27	21.10	29.95	23.85	34.26	3.74	5.71	27.43	29.32	20.358
Idle CO:	229.44	291.87	406.16	327.31	700.75	14.43	25.17	151.68	375.50	266.241
Idle NOX:	5.28	5.90	8.06	6.57	7.74	5.78	6.30	48.80	1.71	8.674

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)

Resting Loss Temp: 69.0 (F)

Hot Soak	0.44	0.55	0.67	0.58	1.68				1.76	
WtDiurnal	2.29	3.93	6.10	4.57	28.48				11.72	
Multiple	6.47	9.56	11.41	10.10	39.71					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Aug UP/00. Minimum Temp: 53. (F) Maximum Temp: 87. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.46	1.74	2.42	1.95	3.90	0.57	0.87	4.18	4.08	1.870
Exhaust HC:	1.11	1.34	1.93	1.52	2.56	0.57	0.87	4.18	2.30	1.486
Evaporat HC:	0.16	0.24	0.29	0.26	1.03				1.48	0.212
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.14	0.12	0.16	0.13	0.24					0.131
Rsting L HC:	0.04	0.04	0.04	0.04	0.07				0.30	0.042
Exhaust CO:	14.41	18.12	25.43	20.38	60.75	1.40	2.44	14.71	32.14	17.606
Exhaust NOX:	1.44	1.60	2.19	1.78	3.81	1.22	1.33	10.29	0.67	2.209

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.04	20.80	29.54	23.51	33.98	3.74	5.71	27.43	29.13	20.111
Idle CO:	225.92	287.41	400.56	322.50	697.45	14.43	25.17	151.68	372.21	262.621
Idle NOX:	5.25	5.87	8.01	6.53	7.73	5.78	6.30	48.80	1.70	8.641

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 70.0 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 70.0 (F)

Resting Loss Temp: 70.0 (F)

Hot Soak	0.47	0.59	0.72	0.62	1.77				1.81	
WtDiurnal	2.38	4.07	6.24	4.70	28.75				12.39	
Multiple	6.82	10.04	11.90	10.58	40.38					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.05	0.05	0.05	0.05	0.07				0.12	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Sep UP/00. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.48	1.78	2.49	2.00	3.84	0.57	0.87	4.18	3.93	1.897
Exhaust HC:	1.18	1.43	2.06	1.63	2.66	0.57	0.87	4.18	2.37	1.565
Evaporat HC:	0.14	0.21	0.26	0.23	0.91				1.30	0.185
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.12	0.10	0.13	0.11	0.20					0.111
Rsting L HC:	0.04	0.04	0.04	0.04	0.06				0.26	0.036
Exhaust CO:	15.50	19.52	27.19	21.90	62.11	1.40	2.44	14.71	33.52	18.744
Exhaust NOX:	1.48	1.65	2.25	1.84	3.85	1.22	1.33	10.29	0.69	2.252

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	18.18	22.29	31.53	25.15	35.33	3.74	5.71	27.43	30.02	21.316
Idle CO:	242.75	308.72	427.41	345.53	713.11	14.43	25.17	151.68	388.17	279.928
Idle NOX:	5.40	6.05	8.26	6.73	7.80	5.78	6.30	48.80	1.74	8.796

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 65.3 (F)

Resting Loss Temp: 65.3 (F)

Hot Soak	0.34	0.43	0.52	0.45	1.38				1.54	
WtDiurnal	2.19	3.79	5.96	4.43	28.18				10.99	

Multiple	6.09	9.00	10.82	9.53	38.96	
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.04	0.04	0.05	0.04	0.06	0.11

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beg_nning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Oct UP/00. Minimum Temp: 41. (F) Maximum Temp: 69. (F)
Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.06	2.36	3.26	2.64	4.73	0.57	0.87	4.18	4.37	2.458
Exhaust HC:	1.50	1.83	2.59	2.06	2.97	0.57	0.87	4.18	2.55	1.892
Evaporat HC:	0.21	0.27	0.32	0.29	1.14				1.63	0.255
Ref.el L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.31	0.24	0.32	0.27	0.57					0.284
Rsting L HC:	0.03	0.03	0.03	0.03	0.05				0.19	0.027
Exhaust CO:	21.67	26.95	36.62	29.95	69.35	1.40	2.44	14.71	36.98	25.012
Exhaust NOX:	1.60	1.78	2.43	1.99	3.83	1.22	1.33	10.29	0.72	2.366
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	23.06	28.35	39.63	31.85	39.40	3.74	5.71	27.43	32.32	26.308
Idle CO:	338.06	420.74	571.58	467.51	796.18	14.43	25.17	151.68	428.29	375.114
Idle NOX:	5.84	6.55	8.92	7.28	7.76	5.78	6.30	48.80	1.83	9.217

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)
Resting Loss Temp: 54.9 (F)

Hot Soak	0.94	0.94	1.10	0.99	2.35	1.62	
WtDiurnal	2.64	4.45	6.66	5.10	30.31	14.15	
Multiple	5.19	7.51	9.36	8.05	36.02		
Crankcase	0.01	0.01	0.01	0.01	0.02	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.03	0.03	0.03	0.03	0.05	0.08	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of

Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2000 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/00. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.59	2.02	2.84	2.27	3.72	0.57	0.87	4.18	3.98	2.035
Exhaust HC:	1.47	1.85	2.62	2.09	3.11	0.57	0.87	4.18	2.81	1.886
Evaporat HC:	0.09	0.14	0.20	0.16	0.57				1.04	0.122
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.01	0.01	0.01	0.01	0.02					0.008
Rsting L HC:	0.02	0.02	0.02	0.02	0.03				0.13	0.018
Exhaust CO:	16.29	20.79	28.08	23.05	55.03	1.40	2.44	14.71	34.56	19.335
Exhaust NOX:	1.74	1.94	2.65	2.16	4.04	1.22	1.33	10.29	0.78	2.503
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.65	28.79	40.18	32.32	41.25	3.74	5.71	27.43	35.62	26.267
Idle CO:	254.13	323.63	435.54	358.34	631.78	14.43	25.17	151.68	400.23	288.016
Idle NOX:	6.32	7.13	9.71	7.93	8.18	5.78	6.30	48.80	1.96	9.707

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.05	0.04	0.04	0.04	0.09		0.07
WtDiurnal	2.11	3.66	5.83	4.29	27.92		10.33
Multiple	2.96	4.95	7.12	5.58	28.85		
Crankcase	0.01	0.01	0.01	0.01	0.02		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.02	0.02	0.02	0.02	0.03		0.05

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input

daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal Year: 2000 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

)Dec UP/00. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.614	0.191	0.086		0.031	0.001	0.001	0.068	0.006	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.58	1.99	2.80	2.24	3.23	0.57	0.87	4.18	2.91	1.996
Exhaust HC:	1.57	1.98	2.80	2.23	3.21	0.57	0.87	4.18	2.91	1.990
Evaporat HC:	0.01	0.01	0.01	0.01	0.02				0.00	0.006
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	17.16	21.96	29.57	24.32	56.07	1.40	2.44	14.71	36.08	20.264
Exhaust NOX:	1.78	1.99	2.71	2.22	4.07	1.22	1.33	10.29	0.79	2.546
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	24.14	30.84	42.91	34.58	42.61	3.74	5.71	27.43	36.95	27.859
Idle CO:	267.75	341.36	458.08	377.56	643.72	14.43	25.17	151.68	417.81	302.185
Idle NOX:	6.48	7.31	9.96	8.14	8.24	5.78	6.30	48.80	2.00	9.864

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.02				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily

maximum, input ambient, calculated hot soak, and/or
calculated running loss) is 40F or less, or input
daily minimum is 25F or less; no evaporative emission
factors (hot soak, diurnal, running loss, or resting
loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jan UP/07. Minimum Temp: 16. (F) Maximum Temp: 36. (F)
Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120
Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035
Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.82	2.30	3.20	2.58	2.71	0.40	0.67	4.00	3.26	2.237
Exhaust HC:	1.82	2.30	3.20	2.57	2.70	0.40	0.67	4.00	3.26	2.230
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	19.17	24.41	31.70	26.64	38.03	1.11	2.04	14.35	40.87	21.573
Exhaust NOX:	1.75	2.04	2.85	2.29	3.79	0.99	1.12	7.81	0.83	2.426
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	25.99	33.94	47.35	38.04	35.77	2.64	4.40	26.26	41.27	29.753
Idle CO:	281.51	333.25	438.44	365.43	436.41	11.41	21.00	147.95	473.37	300.056
Idle NOX:	6.40	7.66	10.69	8.58	7.69	4.68	5.33	37.07	2.11	9.392

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 25.7 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 25.7 (F)
Resting Loss Temp: 25.7 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00		0.00
WtDiurnal	0.00	0.00	0.00	0.00	0.00		0.00
Multiple	0.00	0.00	0.00	0.00	0.00		
Crankcase	0.01	0.01	0.01	0.01	0.01		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.00	0.00	0.00	0.00	0.00		0.00

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 34.3 / 34.3 / 34.3 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Feb UP/07. Minimum Temp: 26. (F) Maximum Temp: 43. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.87	2.33	3.26	2.61	2.67	0.40	0.67	4.00	3.05	2.271
Exhaust HC:	1.86	2.32	3.25	2.61	2.66	0.40	0.67	4.00	3.05	2.264
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	23.45	29.53	39.07	32.45	47.27	1.11	2.04	14.35	45.98	26.104
Exhaust NOX:	1.66	1.93	2.69	2.16	3.73	0.99	1.12	7.81	0.80	2.336
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	26.62	34.29	48.17	38.53	35.26	2.64	4.40	26.26	38.68	30.236
Idle CO:	344.45	403.92	541.18	445.91	542.71	11.41	21.00	147.95	532.50	364.250
Idle NOX:	6.07	7.24	10.10	8.11	7.56	4.68	5.33	37.07	2.02	9.060

0Evaporative Emissions by Component Weathered RVP: 15.0 Hot Soak Temp: 34.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 34.3 (F)

Resting Loss Temp: 34.3 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 48.5 / 48.5 / 48.5 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Mar UP/07. Minimum Temp: 36. (F) Maximum Temp: 61. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.94	2.30	3.15	2.56	3.55	0.40	0.67	4.00	4.50	2.332
Exhaust HC:	1.56	1.90	2.68	2.14	2.34	0.40	0.67	4.00	2.68	1.941
Evaporat HC:	0.19	0.23	0.25	0.24	0.89				1.66	0.217
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.17	0.16	0.21	0.17	0.29					0.161
Rsting L HC:	0.01	0.01	0.01	0.01	0.03				0.16	0.013
Exhaust CO:	21.29	26.13	34.88	28.81	45.74	1.11	2.04	14.35	39.44	23.693
Exhaust NOX:	1.53	1.76	2.46	1.98	3.59	0.99	1.12	7.81	0.74	2.203
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.34	28.07	39.65	31.61	31.07	2.64	4.40	26.26	34.00	25.553
Idle CO:	312.82	357.82	483.72	396.33	525.13	11.41	21.00	147.95	456.76	330.253
Idle NOX:	5.61	6.63	9.25	7.43	7.28	4.68	5.33	37.07	1.89	8.577

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 48.5 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 48.5 (F)
Resting Loss Temp: 48.5 (F)

Hot Soak	0.96	0.85	0.98	0.89	1.97	1.43	
WtDiurnal	2.21	3.82	4.55	4.03	22.79	14.69	
Multiple	3.29	5.47	6.40	5.73	23.72		
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00	
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.01	0.02	0.02	0.02	0.03	0.07	

-M170 Warning:
+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 48.7 / 48.7 / 48.7 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Apr UP/07. Minimum Temp: 35. (F) Maximum Temp: 63. (F)
Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	

VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.96	2.32	3.17	2.58	3.61	0.40	0.67	4.00	4.79	2.355
Exhaust HC:	1.56	1.90	2.68	2.14	2.34	0.40	0.67	4.00	2.68	1.940
Evaporat HC:	0.21	0.25	0.27	0.26	0.95				1.95	0.237
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.18	0.16	0.21	0.17	0.30					0.164
Rsting L HC:	0.01	0.01	0.01	0.01	0.03				0.16	0.013
Exhaust CO:	21.33	26.17	34.94	28.85	45.80	1.11	2.04	14.35	39.36	23.732
Exhaust NOX:	1.53	1.76	2.46	1.98	3.59	0.99	1.12	7.81	0.74	2.201
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	22.32	28.04	39.61	31.58	31.03	2.64	4.40	26.26	33.95	25.531
Idle CO:	313.43	358.33	484.51	396.93	525.81	11.41	21.00	147.95	455.82	330.808
Idle NOX:	5.60	6.62	9.24	7.42	7.27	4.68	5.33	37.07	1.88	8.572
0Evaporative Emissions by Component					Weathered RVP: 13.5				Hot Soak Temp: 48.7 (F)	
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr)									Running Loss Temp: 48.7 (F)	
									Resting Loss Temp: 48.7 (F)	
Hot Soak	0.99	0.88	1.01	0.92	2.03				1.46	
WtDiurnal	2.59	4.29	5.09	4.52	25.12				17.53	
Multiple	3.99	6.26	7.30	6.56	26.23					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.03				0.07	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 58.4 / 58.4 / 58.4 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0May UP/07. Minimum Temp: 44. (F) Maximum Temp: 73. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.54	1.85	2.55	2.06	2.99	0.40	0.67	4.00	3.67	1.934
Exhaust HC:	1.31	1.57	2.22	1.77	2.09	0.40	0.67	4.00	2.48	1.677
Evaporat HC:	0.09	0.14	0.15	0.14	0.65				0.97	0.122
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.12	0.12	0.16	0.13	0.21					0.118
Rsting L HC:	0.02	0.02	0.02	0.02	0.03				0.21	0.018

Exhaust CO:	17.24	20.85	27.97	23.03	41.66	1.11	2.04	14.35	35.75	19.477
Exhaust NOX:	1.44	1.65	2.30	1.85	3.56	0.99	1.12	7.81	0.71	2.107

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	18.74	23.19	32.84	26.14	2[illegible].74	2.64	4.40	26.26	31.49	21.726
Idle CO:	253.28	286.24	389.15	317.72	47[illegible].29	11.41	21.00	147.95	413.99	270.584
Idle NOX:	5.26	6.18	8.63	6.93	[illegible].22	4.68	5.33	37.07	1.80	8.224

0Evaporative Emissions by Component — Weathered RVP: 9.0 — Hot Soak Temp: 58.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 58.4 (F)

Resting Loss Temp: 58.4 (F)

Hot Soak	0.28	0.35	0.42	0.37	1.14				1.28	
WtDiurnal	1.51	2.70	3.28	2.87	18.79				8.03	
Multiple	2.51	3.58	4.27	3.78	27.98					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.04				0.09	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 61.9 / 61.9 / 61.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jun UP/07. Minimum Temp: 46. (F) Maximum Temp: 77. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.596	0.198	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.44	1.72	2.38	1.92	2.79	0.40	0.67	4.00	3.50	1.826
Exhaust HC:	1.25	1.49	2.11	1.68	2.02	0.40	0.67	4.00	2.42	1.612
Evaporat HC:	0.09	0.13	0.14	0.13	0.59				0.84	0.114
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.08	0.08	0.11	0.09	0.15					0.081
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.24	0.020
Exhaust CO:	16.46	19.77	26.60	21.86	40.91	1.11	2.04	14.35	34.58	18.649
Exhaust NOX:	1.41	1.61	2.25	1.80	3.54	0.99	1.12	7.81	0.70	2.076

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	17.87	21.99	31.18	24.80	26.77	2.64	4.40	26.26	30.71	20.789
Idle CO:	241.86	271.53	370.37	301.76	469.67	11.41	21.00	147.95	400.52	258.870
Idle NOX:	5.15	6.04	8.43	6.77	7.17	4.68	5.33	37.07	1.77	8.113

0Evaporative Emissions by Component — Weathered RVP: 7.8 — Hot Soak Temp: 61.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 61.9 (F)

						Resting Loss Temp: 61.9 (F)
Hot Soak	0.23	0.31	0.36	0.32	0.90	1.34
WtDiurnal	1.44	2.60	3.16	2.77	18.04	6.63
Multiple	2.74	3.60	4.22	3.78	27.09	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.02	0.02	0.03	0.03	0.04	0.10

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 69.0 / 69.0 / 69.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Jul UP/07. Minimum Temp: 52. (F) Maximum Temp: 86. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.40	1.67	2.28	1.86	2.90	0.40	0.66	4.00	4.01	1.787
Exhaust HC:	1.14	1.35	1.91	1.52	1.87	0.40	0.66	4.00	2.31	1.496
Evaporat HC:	0.13	0.19	0.21	0.20	0.79				1.41	0.165
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.11	0.11	0.14	0.12	0.19					0.103
Rsting L HC:	0.02	0.02	0.02	0.02	0.05				0.29	0.023
Exhaust CO:	15.00	17.71	24.04	19.64	39.14	1.10	2.01	14.34	32.42	17.079
Exhaust NOX:	1.35	1.54	2.15	1.72	3.48	0.99	1.12	7.72	0.67	2.010
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	16.28	19.99	28.31	22.46	24.82	2.64	4.36	26.24	29.32	19.110
Idle CO:	220.59	243.76	335.73	271.87	449.32	11.35	20.77	147.91	375.50	236.854
Idle NOX:	4.92	5.77	8.06	6.47	7.05	4.68	5.31	36.64	1.71	7.868

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 69.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 69.0 (F)
Resting Loss Temp: 69.0 (F)

Hot Soak	0.40	0.54	0.64	0.57	1.47	1.76
WtDiurnal	1.85	3.28	3.95	3.47	20.47	11.72
Multiple	4.54	6.68	7.25	6.84	32.81	
Crankcase	0.01	0.01	0.01	0.01	0.01	0.00
Refuel	0.00	0.00	0.00	0.00	0.00	
Resting	0.03	0.03	0.03	0.03	0.05	0.12

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 70.0 / 70.0 / 70.0 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Aug UP/07. Minimum Temp: 53. (F) Maximum Temp: 87. (F)
Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.39	1.66	2.27	1.85	2.92	0.40	0.66	4.00	4.08	1.784
Exhaust HC:	1.12	1.33	1.88	1.50	1.85	0.40	0.66	4.00	2.30	1.480
Evaporat HC:	0.13	0.20	0.22	0.21	0.83				1.48	0.174
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.11	0.11	0.14	0.12	0.19					0.106
Rsting L HC:	0.02	0.03	0.03	0.03	0.05				0.30	0.024
Exhaust CO:	14.80	17.43	23.68	19.34	38.91	1.10	2.01	14.34	32.24	16.863
Exhaust NOX:	1.34	1.53	2.13	1.71	3.47	0.99	1.12	7.72	0.67	2.002
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	16.07	19.60	27.92	22.14	24.56	2.64	4.36	26.24	29.13	18.884
Idle CO:	217.62	239.89	330.82	267.69	446.74	11.35	20.77	147.91	372.21	233.790
Idle NOX:	4.89	5.73	8.01	6.43	7.04	4.68	5.31	36.64	1.70	7.838

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 70.0 (F)
(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 70.0 (F)
Resting Loss Temp: 70.0 (F)

Hot Soak	0.42	0.58	0.69	0.61	1.58				1.81	
WtDiurnal	1.92	3.40	4.08	3.60	20.83				12.39	
Multiple	4.80	7.23	7.86	7.41	33.61					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.03	0.03	0.03	0.03	0.05				0.12	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 65.3 / 65.3 / 65.3 (F) Region: High
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.
Reformulated Gas: No

0Sep UP/07. Minimum Temp: 47. (F) Maximum Temp: 84. (F)

Period 1 RVP: 7.8 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.42	1.71	2.34	1.90	2.86	0.40	0.66	4.00	3.93	1.816
Exhaust HC:	1.20	1.42	2.02	1.60	1.95	0.40	0.66	4.00	2.37	1.556
Evaporat HC:	0.11	0.17	0.18	0.18	0.71				1.30	0.148
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.10	0.09	0.12	0.10	0.17					0.091
Rsting L HC:	0.02	0.02	0.02	0.02	0.04				0.26	0.021
Exhaust CO:	15.76	18.78	25.39	20.80	39.98	1.10	2.01	14.34	33.52	17.899
Exhaust NOX:	1.38	1.57	2.20	1.76	3.51	0.99	1.12	7.72	0.69	2.041
0Idle Emission Factors (Gm/Hr)										
VOCIdle HC:	17.10	21.00	29.86	23.70	25.81	2.64	4.36	26.24	30.02	19.984
Idle CO:	231.82	258.40	354.39	287.74	459.00	11.35	20.77	147.91	388.17	248.457
Idle NOX:	5.03	5.91	8.26	6.63	7.11	4.68	5.31	36.64	1.74	7.980

0Evaporative Emissions by Component Weathered RVP: 7.8 Hot Soak Temp: 65.3 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 65.3 (F)

Resting Loss Temp: 65.3 (F)

Hot Soak	0.30	0.40	0.48	0.43	1.14				1.54	
WtDiurnal	1.78	3.16	3.81	3.35	20.07				10.99	
Multiple	4.24	6.06	6.58	6.21	31.92					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.03	0.03	0.03	0.04				0.11	

-M170 Warning:

+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 54.9 / 54.9 / 54.9 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Oct UP/07. Minimum Temp: 41. (F) Maximum Temp: 69. (F)

Period 1 RVP: 11.5 Period 2 RVP: 11.5 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25 0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.97	2.32	3.18	2.59	3.66	0.40	0.66	4.00	4.37	2.365

Exhaust HC:	1.51	1.83	2.59	2.06	2.25	0.40	0.66	4.00	2.55	1.886
Evaporat HC:	0 17	0.23	0.24	0.23	0.91				1.63	0.206
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.27	0.25	0.34	0.28	0.47					0.258
Rsting L HC:	0.01	0.02	0.02	0.02	0.03				0.19	0.015
Exhaust CO:	22.06	26.68	35.90	29.50	47.11	1.10	2.01	14.34	36.98	24.375
Exhaust NOX:	1.48	1.70	2.39	1.91	3.48	0.99	1.12	7.72	0.72	2.147

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	21.64	26.99	38.32	30.45	29.86	2.64	4.36	26.24	32.32	24.760
Idle CO:	324.34	365.85	498.83	406.50	540.88	11.35	20.77	147.91	428.29	340.319
Idle NOX:	5.42	6.40	8.95	7.18	7.05	4.68	5.31	36.64	1.83	8.373

0Evaporative Emissions by Component Weathered RVP: 11.5 Hot Soak Temp: 54.9 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 54.9 (F)

Resting Loss Temp: 54.9 (F)

Hot Soak	0.79	0.87	1.00	0.91	2.03				1.62	
WtDiurnal	2.12	3.72	4.43	3.93	22.09				14.15	
Multiple	3.54	5.36	6.26	5.62	27.08					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.02	0.02	0.02	0.02	0.03				0.08	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles
beginning in 1995 have been reduced as a result of
Gasoline Detergent Additive Regulations (1994).

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 40.4 / 40.4 / 40.4 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Nov UP/07. Minimum Temp: 27. (F) Maximum Temp: 54. (F)

Period 1 RVP: 13.5 Period 2 RVP: 13.5 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.54	1.92	2.65	2.15	2.79	0.40	0.66	4.00	3.98	1.950
Exhaust HC:	1.45	1.78	2.50	2.00	2.34	0.40	0.66	4.00	2.81	1.835
Evaporat HC:	0.07	0.12	0.13	0.12	0.41				1.04	0.097
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Runing L HC:	0.01	0.01	0.01	0.01	0.01					0.008
Rsting L HC:	0.01	0.01	0.01	0.01	0.02				0.13	0.010

Exhaust CO:	15.96	19.94	26.07	21.81	35.52	1.10	2.01	14.34	34.56	18.171
Exhaust NOX:	1.60	1.85	2.59	2.08	3.70	0.99	1.12	7.72	0.78	2.268

0Idle Emission Factors (Gm/Hr)

VOCIdle HC:	20.68	26.38	37.07	29.65	31.09	2.64	4.36	26.24	35.62	24.016
Idle CO:	234.67	273.25	362.33	300.48	407.75	11.35	20.77	147.91	400.23	252.245
Idle NOX:	5.84	6.95	9.72	7.80	7.49	4.68	5.31	36.64	1.96	8.808

0Evaporative Emissions by Component Weathered RVP: 13.5 Hot Soak Temp: 40.4 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) Running Loss Temp: 40.4 (F)

Resting Loss Temp: 40.4 (F)

Hot Soak	0.04	0.03	0.03	0.03	0.07		0.07
WtDiurnal	1.70	3.04	3.67	3.22	19.71		10.33
Multiple	2.36	4.05	4.83	4.27	20.38		
Crankcase	0.01	0.01	0.01	0.01	0.01		0.00
Refuel	0.00	0.00	0.00	0.00	0.00		
Resting	0.01	0.01	0.01	0.01	0.02		0.05

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of July 1st of the indicated calendar year.

0Cal. Year: 2007 I/M Program: Yes Ambient Temp: 36.5 / 36.5 / 36.5 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Dec UP/07. Minimum Temp: 26. (F) Maximum Temp: 48. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.595	0.199	0.087		0.032	0.002	0.002	0.077	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.54	1.91	2.68	2.15	2.45	0.40	0.66	4.00	2.91	1.936
Exhaust HC:	1.53	1.91	2.67	2.14	2.44	0.40	0.66	4.00	2.91	1.929
Evaporat HC:	0.01	0.01	0.01	0.01	0.01				0.00	0.007
Refuel L HC:	0.00	0.00	0.00	0.00	0.00					0.000

Runing L HC:	0.00	0.00	0.00	0.00	0.00					0.000
Rsting L HC:	0.00	0.00	0.00	0.00	0.00				0.00	0.000
Exhaust CO:	16.77	21.07	27.50	23.04	36.33	1.10	2.01	14.34	36.08	19.033
Exhaust NOX:	1.63	1.90	2.66	2.13	3.73	0.99	1.12	7.72	0.79	2.306

0Idle Emission Factors (Gm Hr)

VOCIdle HC:	21.94	28.19	39.55	31.66	32.37	2.64	4.36	26.24	36.95	25.388
Idle CO:	246.46	288.64	382.09	317.21	417.11	11.35	20.77	147.91	417.81	264.439
Idle NOX:	5.97	7.13	9.98	8.00	7.55	4.68	5.31	36.64	2.00	8.950

0Evaporative Emissions by Component — Weathered RVP: 15.0 — Hot Soak Temp: 36.5 (F)

(Hot Soak: g/trip, Diurnals: g, Crankcase: g/mi, Refuel: g/gal, Resting: g/hr) — Running Loss Temp: 36.5 (F)

Resting Loss Temp: 36.5 (F)

Hot Soak	0.00	0.00	0.00	0.00	0.00				0.00	
WtDiurnal	0.00	0.00	0.00	0.00	0.00				0.00	
Multiple	0.00	0.00	0.00	0.00	0.00					
Crankcase	0.01	0.01	0.01	0.01	0.01				0.00	
Refuel	0.00	0.00	0.00	0.00	0.00					
Resting	0.00	0.00	0.00	0.00	0.00				0.00	

-M170 Warning:

\+ Exhaust emissions for gasoline fueled vehicles beginning in 1995 have been reduced as a result of Gasoline Detergent Additive Regulations (1994).

-M 83 Comment:

\+ One or more evaporative temperatures (input daily maximum, input ambient, calculated hot soak, and/or calculated running loss) is 40F or less, or input daily minimum is 25F or less; no evaporative emission factors (hot soak, diurnal, running loss, or resting loss) will be calculated.

0Emission factors are as of Jan. 1st of the indicated calendar year.

0Cal. Year: 2015 I/M Program: Yes Ambient Temp: 25.7 / 25.7 / 25.7 (F) Region: High

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 5500. Ft.

Reformulated Gas: No

0Jan UP/15. Minimum Temp: 16. (F) Maximum Temp. 36. (F)

Period 1 RVP: 15.0 Period 2 RVP: 15.0 Period 2 Start Yr: 1992

0 Ether Blend Market Share: 0.880 Alcohol Blend Market Share: 0.120

Ether Blend Oxygen Content: 0.027 Alcohol Blend Oxygen Content: 0.035

Alcohol Blend RVP Waiver: No

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
VMT Mix:	0.582	0.204	0.089		0.033	0.002	0.004	0.082	0.005	

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.82	2.33	3.24	2.61	2.53	0.42	0.67	3.98	3.26	2.247
Exhaust HC:	1.81	2.32	3.24	2.60	2.52	0.42	0.67	3.98	3.26	2.240