

Corporate Headquarters

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W.O. 11-0058

May 2, 2011

Mr. Noel Owsley
Town of Yucca Valley
57090 Twentynine Palms Highway #B
Yucca Valley, CA 92284

RE: Twentynine Palms Highway (State Route 62) and Dumosa Avenue Traffic Signal Warrant Analysis

Dear Mr. Owsley,

The purpose of this analysis letter is to investigate the need for a traffic control signal at the intersection of Twentynine Palms Highway (State Route 62, SR-62) and Dumosa Avenue in the Town of Yucca Valley.

Twentynine Palms Highway (SR-62) is a four lane divided highway (two lanes in each direction) that generally runs east/west. At the intersection with Dumosa Avenue, the posted speed limit is 40 mph and there is a left-turn lane in both directions. Traffic control signals currently exist at Sage Avenue (approximately 1,500 feet west of Dumosa Avenue) and SR-247 (approximately 1,150 feet east of Dumosa Avenue).

Dumosa Avenue is a two lane local road (one lane in each direction) that generally runs north/south. At the intersection with Twentynine Palms Highway (SR-62), it is stop controlled in both directions. Dumosa Avenue provides access to commercial properties to the north and south of Twentynine Palms Highway (SR-62) as well as the town hall for the Town of Yucca Valley.

Per Chapter 4C of the California Manual on Uniform Traffic Control Devices (Ca MUTCD) dated January 21, 2010:

The investigation of the need for a traffic control signal shall include the analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study location:

Warrant 1, Eight-Hour Vehicular Volume.

Warrant 2, Four-Hour Vehicular Volume.

Warrant 3, Peak Hour.

Warrant 4, Pedestrian Volume.

Warrant 5, School Crossing.

Warrant 6, Coordinated Signal System.

Warrant 7, Crash Experience.

Warrant 8, Roadway Network.

Vehicular turning movement counts were conducted at the intersection of Twentynine Palms Highway (SR-62) and Dumosa Avenue by Counts Unlimited, Inc. on Wednesday March 30, 2011 between 6 AM and 8 PM. The count worksheets are attached.

Based on these counts, Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), and Warrant 3 (Peak Hour) are not satisfied in existing conditions. Worksheets for these warrants in existing conditions are attached.

The Town of Yucca Valley is proposing to close Antelope Road west of Dumosa Avenue. In order to analyze the impact of this closure, additional vehicular turning movement counts were conducted at the intersections of Dumosa Avenue and Antelope Trail on Wednesday April 27, 2011. The count worksheets are attached.

The Town of Yucca Valley is currently reviewing a 74 dwelling unit attached senior housing project on the northwest corner of Twentynine Palms Highway (SR-62) and Dumosa Avenue. Assuming future construction of this project, the traffic volumes entering and exiting the intersection of Dumosa Avenue and Twentynine Palms Highway (SR-62) along the northern leg would increase.

The Town of Yucca Valley is also planning to construct a raised median on Joshua Lane south of Twentynine Palms Highway (SR-62). When this median is constructed, existing traffic utilizing Twentynine Palms Outerhighway South would be diverted to Twentynine Palms Highway (SR-62) and would enter and exit the intersection of Dumosa Avenue and Twentynine Palms Highway (SR-62) along the southern leg. In order to analyze the impact of this diversion, additional vehicular turning movement counts were conducted at the intersection of Joshua Lane and Twentynine Palms Outerhighway South and the intersection of Old Woman Springs Road (SR-247) and Twentynine Palms Highway (SR-62) on Wednesday April 27, 2011. The count worksheets are attached.

With the construction of the senior housing project, closure of Antelope Trail and construction of a raised median on Joshua Lane, Warrant 1 (Eight-Hour Vehicular Volume) would not be satisfied, but Warrant 2 (Four-Hour Vehicular Volume) and Warrant 3 (Peak Hour) would be satisfied. Worksheets for these warrants are attached.

The levels of service (LOS) for this intersection have been calculated using Highway Capacity Manual 2000 methodology during the side street peak hour in this scenario with and without a traffic signal. For comparison purposes, the existing LOS during the same time period was also calculated. These levels of service are presented in Table 1. The LOS calculation worksheets are attached.

Table 1 – Intersection Levels of Service

Scenario	Traffic Control	Delay (sec)	LOS
1. Existing	TWSC	52.0	F
2. Existing, Antelope Trail closed, Senior Apts, Raised Median on Joshua Ln	TWSC	82.0	F
3. Existing, Antelope Trail closed, Senior Apts, Raised Median on Joshua Ln	Signal	15.8	B

TWSC = Two Way Stop Controlled

Warrant 4 (Pedestrian Volume) is not satisfied since we did not notice any pedestrian activity and the absolute minimum pedestrian volume needed to satisfy the warrant is 50 pedestrians per hour for four hours or 95 pedestrians per hour for any one hour.

Warrant 5 (School Crossing) is not satisfied since school children crossing the major street was not the principal reason for considering a new traffic control signal at this intersection. The closest school is Yucca Valley High School and is located more than ½ mile from this intersection.

Warrant 6 (Coordinated Signal System) is not satisfied since the existing upstream and downstream traffic control signals along Twentynine Palms Highway (SR-62) are not coordinated and a new traffic control signal at this location will not provide progressive operation along this corridor.

Warrant 7 (Crash Experience) is not satisfied. Based on accident data provided by the Town of Yucca Valley, only one accident occurred at this location between 2008 and 2010 which could have been avoided with a traffic control signal.

Warrant 8 (Roadway Network) is not satisfied since Dumosa Road is a local road and not considered a major route.

Based on this traffic signal warrant analysis, we recommend a new traffic control signal at this location after the construction of the raised median on Joshua Lane south of Twentynine Palms Highway (SR-62).

If you have any questions regarding this report, please call the undersigned for clarification.

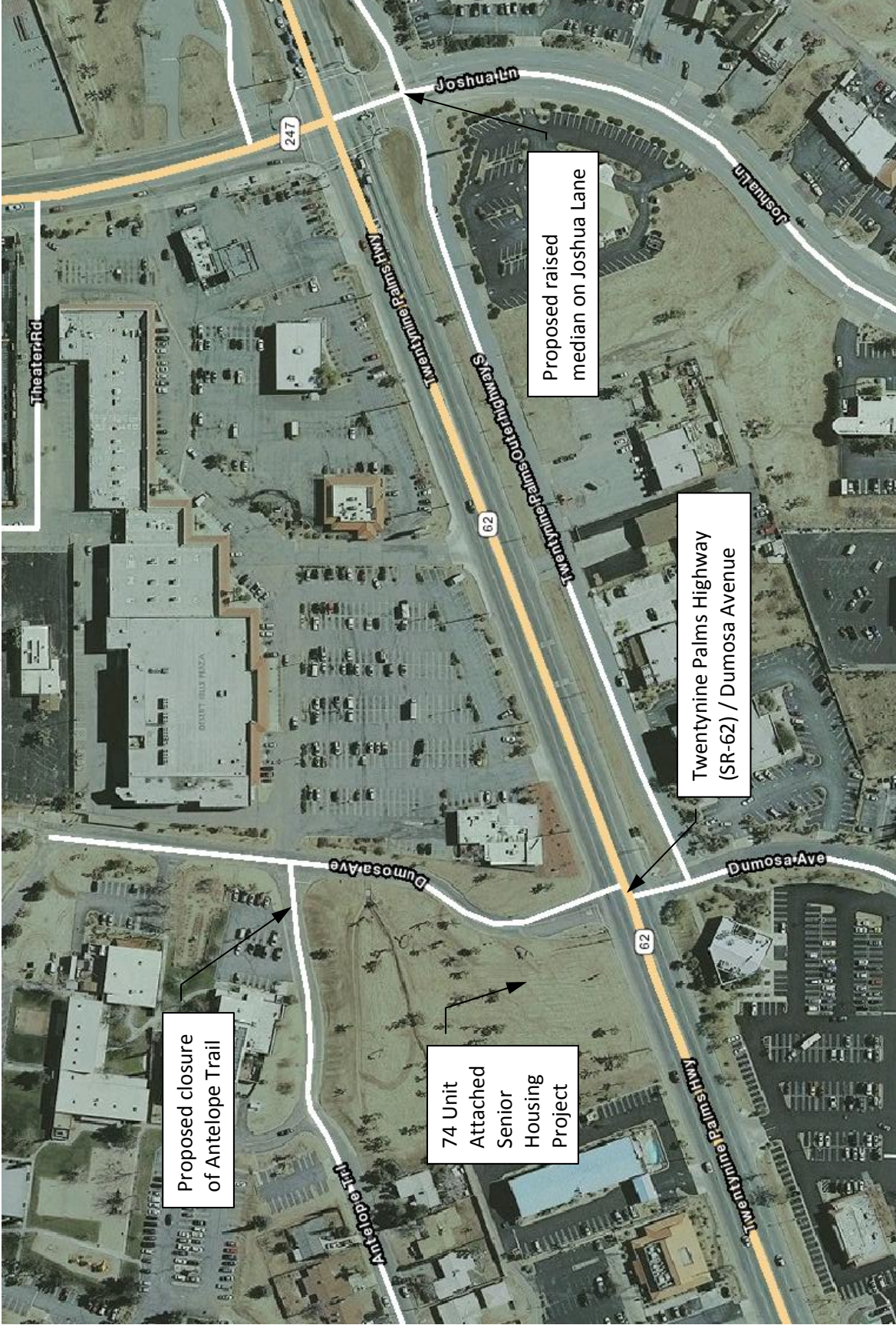
Sincerely yours,

ALBERT A. WEBB ASSOCIATES

Myung Choo, T.E.
Senior Engineer

Dilesh Sheth, P.E., T.E.
Director, Traffic and Transportation

Vicinity Map



Proposed closure of Antelope Trail

74 Unit Attached Senior Housing Project

Proposed raised median on Joshua Lane

Twentynine Palms Highway (SR-62) / Dumosa Avenue

Town of Yucca Valley
 N/S: Dumosa Avenue
 E/W: SR-62 Twentynine Palms Highway
 Weather: Sunny

File Name : YCVDU62
 Site Code : 00000001
 Start Date : 3/30/2011
 Page No : 1

Groups Printed- Total Volume

Start Time	Dumosa Avenue Southbound				SR-62 Twentynine Palms Highway Westbound				Dumosa Avenue Northbound				SR-62 Twentynine Palms Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
06:00 AM	0	0	0	0	1	116	1	118	1	0	3	4	1	115	2	118	240
06:15 AM	0	0	2	2	5	127	2	134	1	0	0	1	0	110	0	110	247
06:30 AM	0	0	1	1	5	111	2	118	2	0	1	3	5	163	1	169	291
06:45 AM	0	0	3	3	4	179	3	186	0	1	1	2	6	181	1	188	379
Total	0	0	6	6	15	533	8	556	4	1	5	10	12	569	4	585	1157
07:00 AM	1	0	1	2	4	208	2	214	1	0	1	2	8	166	3	177	395
07:15 AM	0	0	0	0	8	235	9	252	1	0	1	2	4	150	1	155	409
07:30 AM	1	1	2	4	5	142	1	148	0	0	3	3	6	140	2	148	303
07:45 AM	0	0	3	3	10	198	2	210	0	0	8	8	4	161	5	170	391
Total	2	1	6	9	27	783	14	824	2	0	13	15	22	617	11	650	1498
08:00 AM	0	0	1	1	11	187	0	198	0	0	1	1	4	161	0	165	365
08:15 AM	1	0	1	2	11	220	2	233	2	1	5	8	2	195	7	204	447
08:30 AM	0	0	7	7	11	211	2	224	3	1	5	9	8	197	5	210	450
08:45 AM	2	0	2	4	14	234	4	252	2	1	9	12	14	183	7	204	472
Total	3	0	11	14	47	852	8	907	7	3	20	30	28	736	19	783	1734
09:00 AM	1	1	2	4	23	229	3	255	0	1	10	11	11	197	6	214	484
09:15 AM	0	0	2	2	24	229	3	256	3	0	11	14	12	197	11	220	492
09:30 AM	0	0	6	6	17	207	11	235	1	0	13	14	16	214	10	240	495
09:45 AM	0	0	2	2	20	217	7	244	0	0	17	17	19	236	7	262	525
Total	1	1	12	14	84	882	24	990	4	1	51	56	58	844	34	936	1996
10:00 AM	2	0	6	8	16	198	5	219	1	1	12	14	15	234	4	253	494
10:15 AM	1	0	9	10	17	228	5	250	5	1	19	25	15	212	4	231	516
10:30 AM	1	0	4	5	21	251	5	277	3	2	14	19	18	225	4	247	548
10:45 AM	0	0	4	4	23	222	8	253	2	2	13	17	24	232	6	262	536
Total	4	0	23	27	77	899	23	999	11	6	58	75	72	903	18	993	2094
11:00 AM	0	0	7	7	19	250	5	274	2	0	21	23	16	203	2	221	525
11:15 AM	2	1	5	8	16	235	6	257	2	0	14	16	25	246	4	275	556
11:30 AM	1	0	5	6	18	236	8	262	3	2	10	15	20	286	6	312	595
11:45 AM	1	0	11	12	24	265	12	301	3	2	11	16	27	235	4	266	595
Total	4	1	28	33	77	986	31	1094	10	4	56	70	88	970	16	1074	2271
12:00 PM	1	0	11	12	16	253	11	280	0	1	23	24	25	267	3	295	611
12:15 PM	1	0	4	5	19	294	6	319	1	3	8	12	16	213	5	234	570
12:30 PM	0	0	7	7	26	267	3	296	1	0	7	8	27	238	4	269	580
12:45 PM	1	0	11	12	20	297	2	319	2	0	13	15	23	222	3	248	594
Total	3	0	33	36	81	1111	22	1214	4	4	51	59	91	940	15	1046	2355
01:00 PM	1	0	8	9	16	267	16	299	4	1	14	19	18	247	6	271	598
01:15 PM	0	0	10	10	19	274	6	299	4	1	13	18	21	235	2	258	585
01:30 PM	1	1	10	12	27	256	8	291	0	0	14	14	25	220	2	247	564
01:45 PM	0	1	7	8	24	280	6	310	3	1	9	13	23	213	3	239	570
Total	2	2	35	39	86	1077	36	1199	11	3	50	64	87	915	13	1015	2317
02:00 PM	2	1	7	10	21	274	8	303	2	0	20	22	21	236	1	258	593
02:15 PM	2	1	6	9	18	300	7	325	2	1	20	23	18	244	4	266	623
02:30 PM	1	0	9	10	16	250	13	279	2	1	8	11	22	258	3	283	583
02:45 PM	1	0	7	8	20	281	11	312	3	0	17	20	23	196	4	223	563
Total	6	2	29	37	75	1105	39	1219	9	2	65	76	84	934	12	1030	2362
03:00 PM	1	1	5	7	17	249	15	281	2	1	10	13	34	246	2	282	583
03:15 PM	0	0	6	6	18	263	15	296	1	3	9	13	18	217	3	238	553
03:30 PM	0	2	8	10	20	294	12	326	2	0	20	22	22	246	4	272	630
03:45 PM	1	0	9	10	19	279	6	304	9	2	19	30	27	264	5	296	640
Total	2	3	28	33	74	1085	48	1207	14	6	58	78	101	973	14	1088	2406

Town of Yucca Valley
 N/S: Dumosa Avenue
 E/W: SR-62 Twentynine Palms Highway
 Weather: Sunny

File Name : YCVDU62
 Site Code : 00000001
 Start Date : 3/30/2011
 Page No : 2

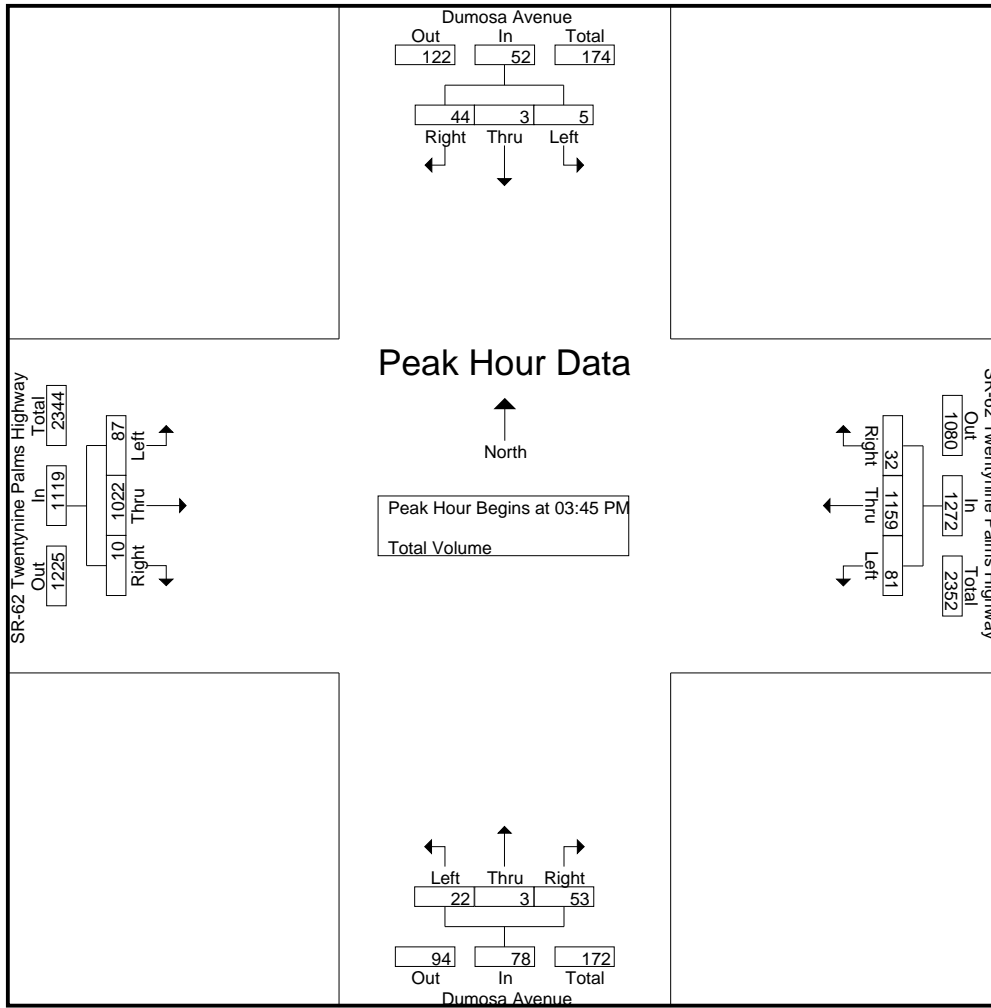
Groups Printed- Total Volume

Start Time	Dumosa Avenue Southbound				SR-62 Twentynine Palms Highway Westbound				Dumosa Avenue Northbound				SR-62 Twentynine Palms Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	1	1	13	15	17	290	9	316	4	0	10	14	23	253	3	279	624
04:15 PM	2	2	12	16	25	281	12	318	5	1	8	14	19	236	2	257	605
04:30 PM	1	0	10	11	20	309	5	334	4	0	16	20	18	269	0	287	652
04:45 PM	1	0	11	12	13	272	6	291	3	1	11	15	14	262	2	278	596
Total	5	3	46	54	75	1152	32	1259	16	2	45	63	74	1020	7	1101	2477
05:00 PM	1	1	12	14	25	286	7	318	3	0	3	6	22	286	7	315	653
05:15 PM	0	0	11	11	12	261	11	284	3	0	9	12	34	212	10	256	563
05:30 PM	1	1	6	8	8	217	13	238	1	1	7	9	26	240	2	268	523
05:45 PM	2	0	5	7	15	229	9	253	4	0	4	8	13	208	3	224	492
Total	4	2	34	40	60	993	40	1093	11	1	23	35	95	946	22	1063	2231
06:00 PM	0	0	4	4	13	197	5	215	4	0	9	13	12	187	6	205	437
06:15 PM	0	1	9	10	14	208	9	231	3	0	10	13	21	165	1	187	441
06:30 PM	1	0	7	8	12	155	7	174	0	2	5	7	16	169	3	188	377
06:45 PM	1	1	5	7	14	158	7	179	0	1	4	5	13	170	2	185	376
Total	2	2	25	29	53	718	28	799	7	3	28	38	62	691	12	765	1631
07:00 PM	2	0	13	15	9	159	1	169	3	0	4	7	13	171	4	188	379
07:15 PM	1	0	11	12	13	136	2	151	2	1	12	15	14	158	2	174	352
07:30 PM	2	1	2	5	9	131	1	141	0	0	4	4	13	137	2	152	302
07:45 PM	1	2	7	10	11	124	1	136	0	1	7	8	13	154	1	168	322
Total	6	3	33	42	42	550	5	597	5	2	27	34	53	620	9	682	1355
Grand Total	44	20	349	413	873	12726	358	13957	115	38	550	703	927	11678	206	12811	27884
Apprch %	10.7	4.8	84.5		6.3	91.2	2.6		16.4	5.4	78.2		7.2	91.2	1.6		
Total %	0.2	0.1	1.3	1.5	3.1	45.6	1.3	50.1	0.4	0.1	2	2.5	3.3	41.9	0.7	45.9	

Start Time	Dumosa Avenue Southbound				SR-62 Twentynine Palms Highway Westbound				Dumosa Avenue Northbound				SR-62 Twentynine Palms Highway Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
03:45 PM	1	0	9	10	19	279	6	304	9	2	19	30	27	264	5	296	640
04:00 PM	1	1	13	15	17	290	9	316	4	0	10	14	23	253	3	279	624
04:15 PM	2	2	12	16	25	281	12	318	5	1	8	14	19	236	2	257	605
04:30 PM	1	0	10	11	20	309	5	334	4	0	16	20	18	269	0	287	652
Total Volume	5	3	44	52	81	1159	32	1272	22	3	53	78	87	1022	10	1119	2521
% App. Total	9.6	5.8	84.6		6.4	91.1	2.5		28.2	3.8	67.9		7.8	91.3	0.9		
PHF	.625	.375	.846	.813	.810	.938	.667	.952	.611	.375	.697	.650	.806	.950	.500	.945	.967

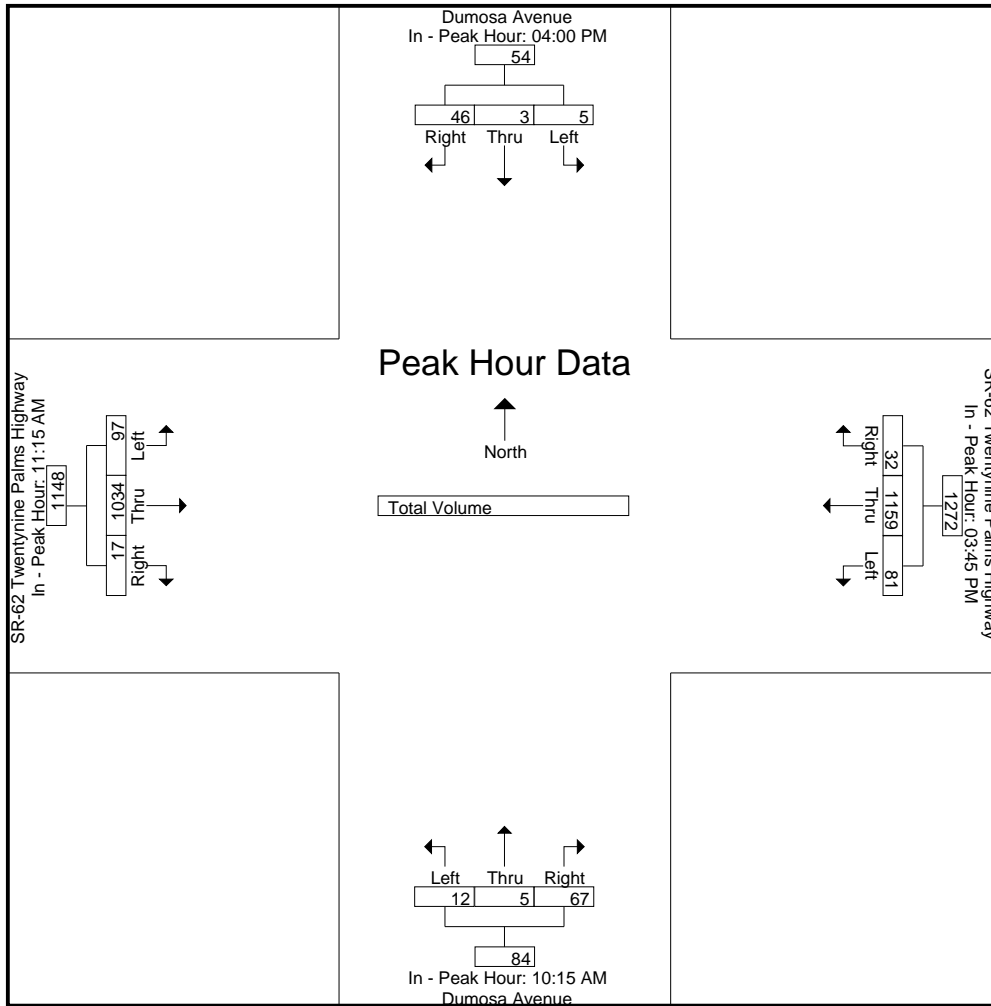
Peak Hour Analysis From 06:00 AM to 07:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:45 PM



Peak Hour Analysis From 06:00 AM to 07:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM				03:45 PM				10:15 AM				11:15 AM			
+0 mins.	1	1	13	15	19	279	6	304	5	1	19	25	25	246	4	275
+15 mins.	2	2	12	16	17	290	9	316	3	2	14	19	20	286	6	312
+30 mins.	1	0	10	11	25	281	12	318	2	2	13	17	27	235	4	266
+45 mins.	1	0	11	12	20	309	5	334	2	0	21	23	25	267	3	295
Total Volume	5	3	46	54	81	1159	32	1272	12	5	67	84	97	1034	17	1148
% App. Total	9.3	5.6	85.2		6.4	91.1	2.5		14.3	6	79.8		8.4	90.1	1.5	
PHF	.625	.375	.885	.844	.810	.938	.667	.952	.600	.625	.798	.840	.898	.904	.708	.920



Project:
 W.O.: 11-0058
 Date: 4/29/2011

Intersection: **Dumosa Avenue / SR-62 Twentynine Palms Highway**
 Scenario: Existing

California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

	Street Name	Critical Approach Speed	Lanes
Major St:	<u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>
Minor St:	<u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

Speed limit or critical speed on major street traffic > 64 km/h (40mph).....

In built up area of isolated community of < 10,000 population.....

or **RURAL (R)**
 URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume **SATISFIED** YES NO
 (Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED** YES NO
80% SATISFIED YES NO

		Volume (VPH) ¹									
Minimum Requirements (80% shown in brackets)		9:00 AM- 10:00 AM	10:00 AM- 11:00 AM	11:00 AM- 12:00 PM	12:00 PM- 1:00 PM	1:00 PM- 2:00 PM	2:00 PM- 3:00 PM	3:00 PM- 4:00 PM	4:00 PM- 5:00 PM		
Major St	600 (480)	1,926	1,992	2,168	2,260	2,214	2,249	2,295	2,360		
Minor St	150 (120)	56	75	70	59	64	76	78	63		

Condition B - Interruption of Continuous Traffic **100% SATISFIED** YES NO
80% SATISFIED YES NO

		Volume (VPH) ¹									
Minimum Requirements (80% shown in brackets)		9:00 AM- 10:00 AM	10:00 AM- 11:00 AM	11:00 AM- 12:00 PM	12:00 PM- 1:00 PM	1:00 PM- 2:00 PM	2:00 PM- 3:00 PM	3:00 PM- 4:00 PM	4:00 PM- 5:00 PM		
Major St	900 (720)	1,926	1,992	2,168	2,260	2,214	2,249	2,295	2,360		
Minor St	75 (60)	56	75	70	59	64	76	78	63		

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

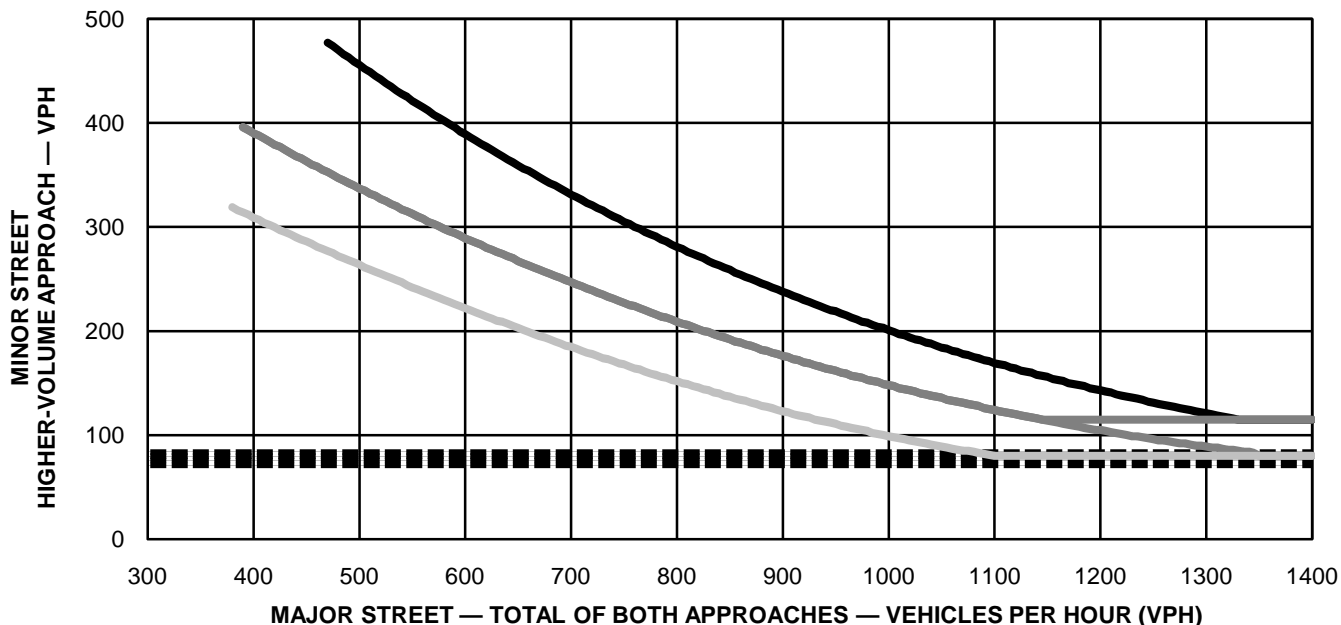
California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

Street Name	Critical Approach Speed	Lanes	Volume (VPH) ¹					
			10:15 AM-11:15 AM	11:15 AM-12:15 PM	2:00 PM-3:00 PM	3:30 PM-4:30 PM		
Major St: <u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>	<u>2,015</u>	<u>2,248</u>	<u>2,249</u>	<u>2,368</u>		
Minor St: <u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>	<u>84</u>	<u>71</u>	<u>76</u>	<u>80</u>		

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

- Speed limit or critical speed on major street traffic > 64 km/h (40mph)..... } **RURAL (R)**
or
In built up area of isolated community of < 10,000 population..... }
 URBAN (U)



- 2 OR MORE LANES & 2 OR MORE LANES 2 OR MORE LANES & 1 LANE
 1 LANE & 1 LANE
× 10:15 AM-11:15 AM □ 11:15 AM-12:15 PM
△ 2:00 PM-3:00 PM ○ 3:30 PM-4:30 PM

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED YES NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

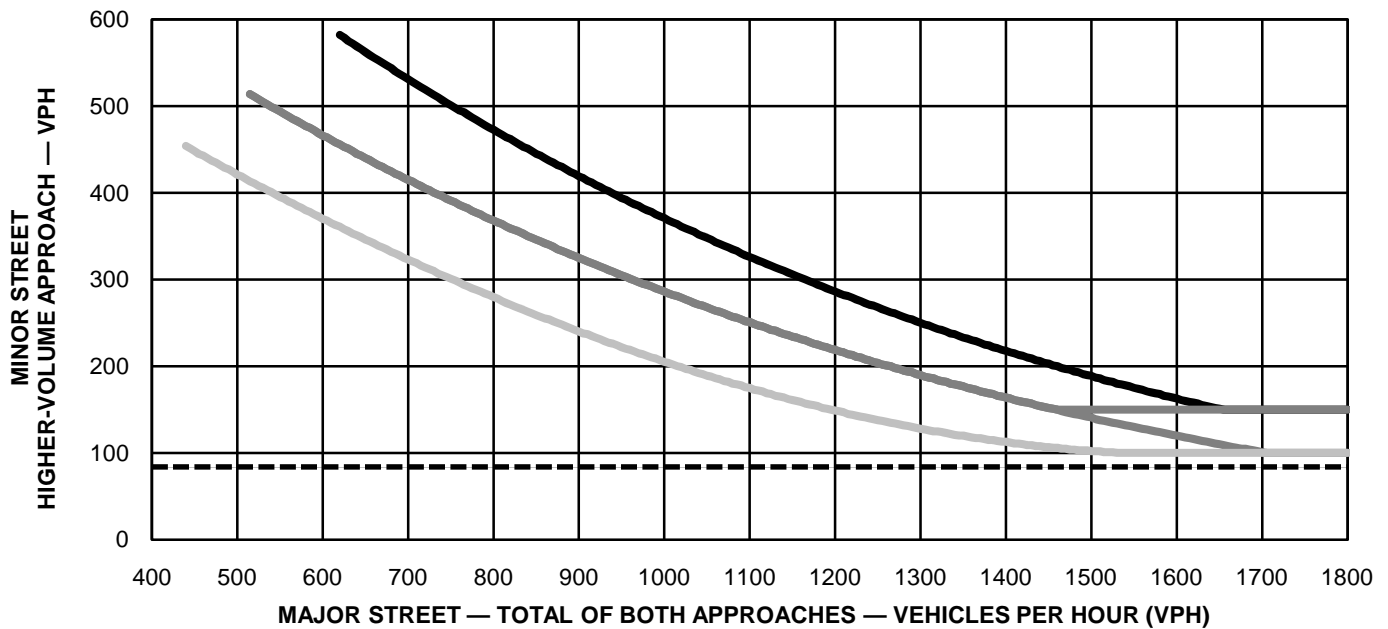
California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

Figure 4C-3. Warrant 3, Peak Hour

	Street Name	Critical Approach Speed	Lanes	Volume (VPH) ¹ 10:15 AM-11:15 AM
Major St:	<u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>	<u>2,015</u>
Minor St:	<u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>	<u>84</u>

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

- Speed limit or critical speed on major street traffic > 64 km/h (40mph)..... } **RURAL (R)**
or
In built up area of isolated community of < 10,000 population..... }
 URBAN (U)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3 - Peak Hour

SATISFIED YES NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Town of Yucca Valley
 N/S: Dumosa Avenue
 E/W: Antelope Trail - Driveway
 Weather: Sunny

File Name : YCVDUATPM
 Site Code : 11104043
 Start Date : 4/27/2011
 Page No : 1

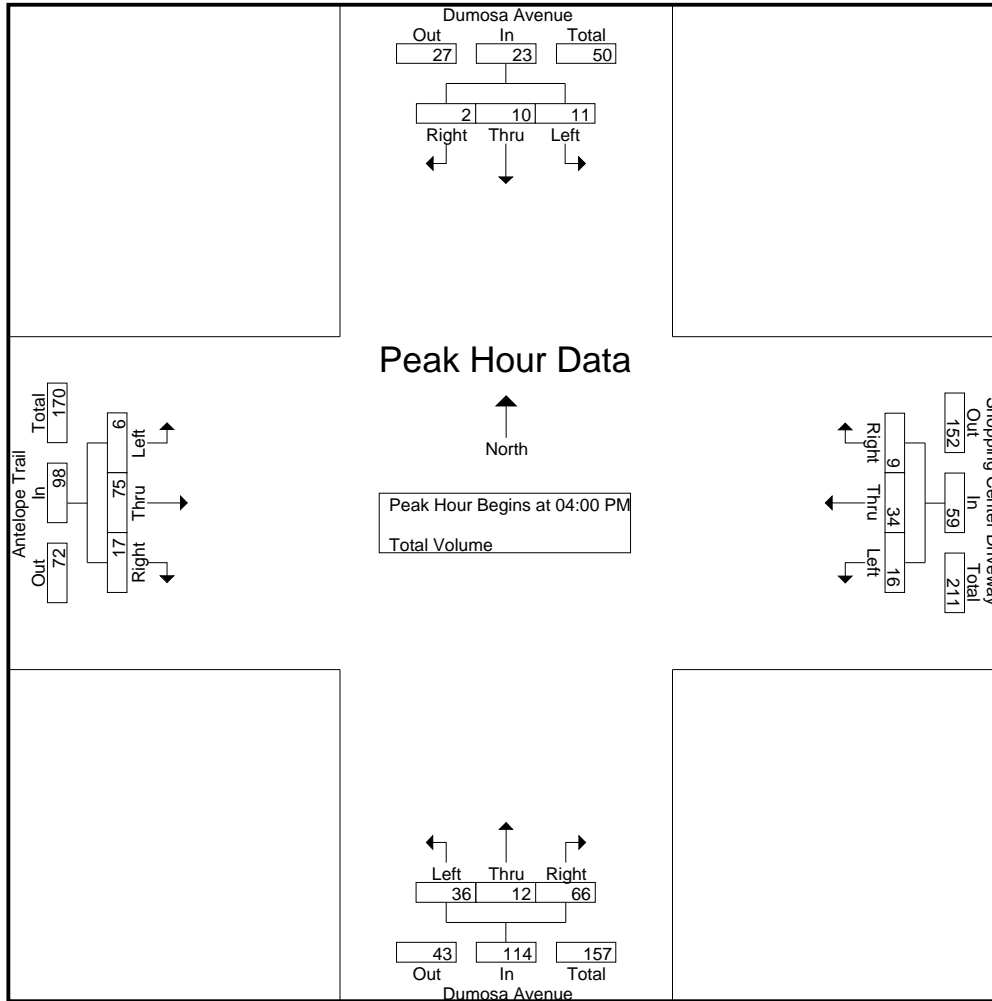
Groups Printed- Total Volume

Start Time	Dumosa Avenue Southbound				Shopping Center Driveway Westbound				Dumosa Avenue Northbound				Antelope Trail Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	3	1	1	5	2	11	1	14	12	2	14	28	2	17	3	22	69
04:15 PM	3	2	0	5	3	7	1	11	12	6	17	35	2	28	5	35	86
04:30 PM	3	3	0	6	6	7	4	17	10	3	23	36	2	14	7	23	82
04:45 PM	2	4	1	7	5	9	3	17	2	1	12	15	0	16	2	18	57
Total	11	10	2	23	16	34	9	59	36	12	66	114	6	75	17	98	294
05:00 PM	3	5	0	8	3	6	2	11	4	5	11	20	0	22	2	24	63
05:15 PM	1	1	0	2	1	9	1	11	6	4	19	29	0	14	3	17	59
05:30 PM	5	1	2	8	4	7	0	11	4	4	17	25	0	13	1	14	58
05:45 PM	1	2	0	3	5	9	2	16	9	7	17	33	0	16	1	17	69
Total	10	9	2	21	13	31	5	49	23	20	64	107	0	65	7	72	249
Grand Total	21	19	4	44	29	65	14	108	59	32	130	221	6	140	24	170	543
Apprch %	47.7	43.2	9.1		26.9	60.2	13		26.7	14.5	58.8		3.5	82.4	14.1		
Total %	3.9	3.5	0.7	8.1	5.3	12	2.6	19.9	10.9	5.9	23.9	40.7	1.1	25.8	4.4	31.3	

Start Time	Dumosa Avenue Southbound				Shopping Center Driveway Westbound				Dumosa Avenue Northbound				Antelope Trail Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	3	1	1	5	2	11	1	14	12	2	14	28	2	17	3	22	69
04:15 PM	3	2	0	5	3	7	1	11	12	6	17	35	2	28	5	35	86
04:30 PM	3	3	0	6	6	7	4	17	10	3	23	36	2	14	7	23	82
04:45 PM	2	4	1	7	5	9	3	17	2	1	12	15	0	16	2	18	57
Total Volume	11	10	2	23	16	34	9	59	36	12	66	114	6	75	17	98	294
% App. Total	47.8	43.5	8.7		27.1	57.6	15.3		31.6	10.5	57.9		6.1	76.5	17.3		
PHF	.917	.625	.500	.821	.667	.773	.563	.868	.750	.500	.717	.792	.750	.670	.607	.700	.855

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

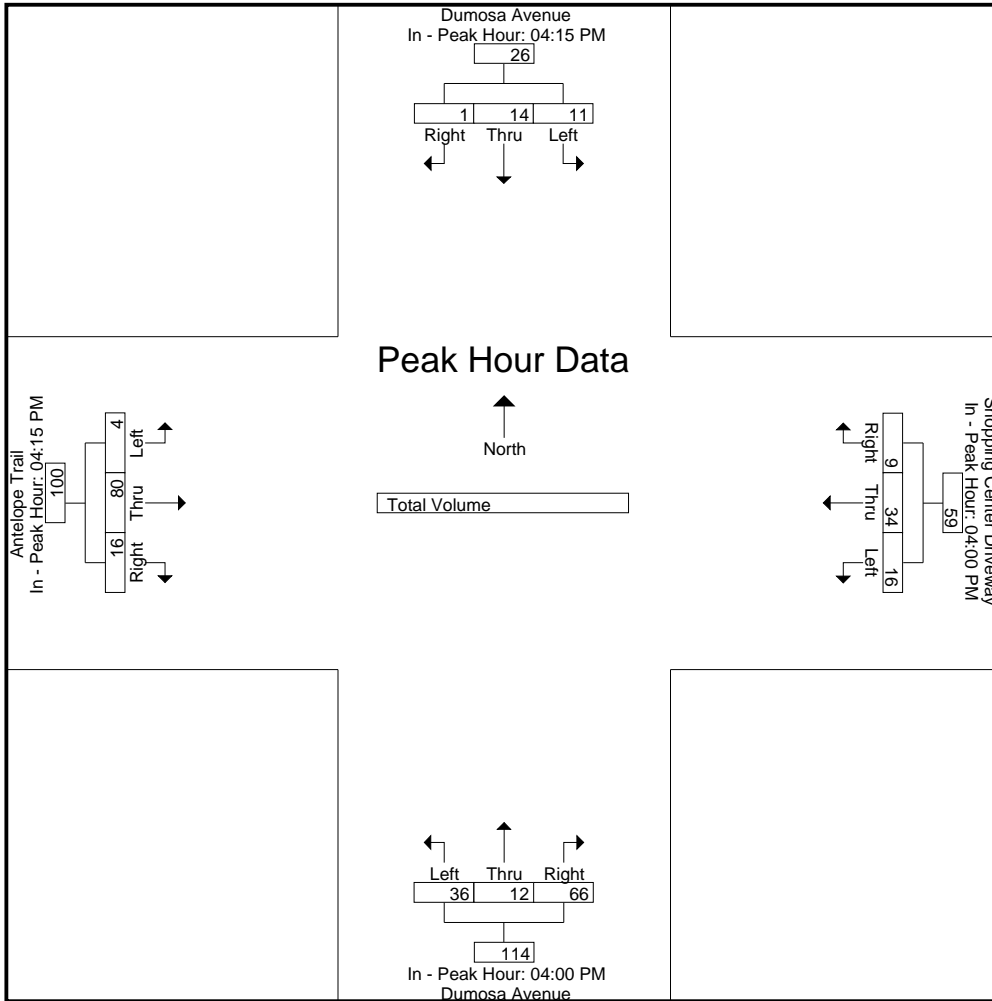
Peak Hour for Entire Intersection Begins at 04:00 PM



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:00 PM				04:15 PM			
+0 mins.	3	2	0	5	2	11	1	14	12	2	14	28	2	28	5	35
+15 mins.	3	3	0	6	3	7	1	11	12	6	17	35	2	14	7	23
+30 mins.	2	4	1	7	6	7	4	17	10	3	23	36	0	16	2	18
+45 mins.	3	5	0	8	5	9	3	17	2	1	12	15	0	22	2	24
Total Volume	11	14	1	26	16	34	9	59	36	12	66	114	4	80	16	100
% App. Total	42.3	53.8	3.8		27.1	57.6	15.3		31.6	10.5	57.9		4	80	16	
PHF	.917	.700	.250	.813	.667	.773	.563	.868	.750	.500	.717	.792	.500	.714	.571	.714



Town of Yucca Valley
 N/S: Joshua Lane
 E/W: Twentynine Palms Outerhighway South
 Weather: Sunny

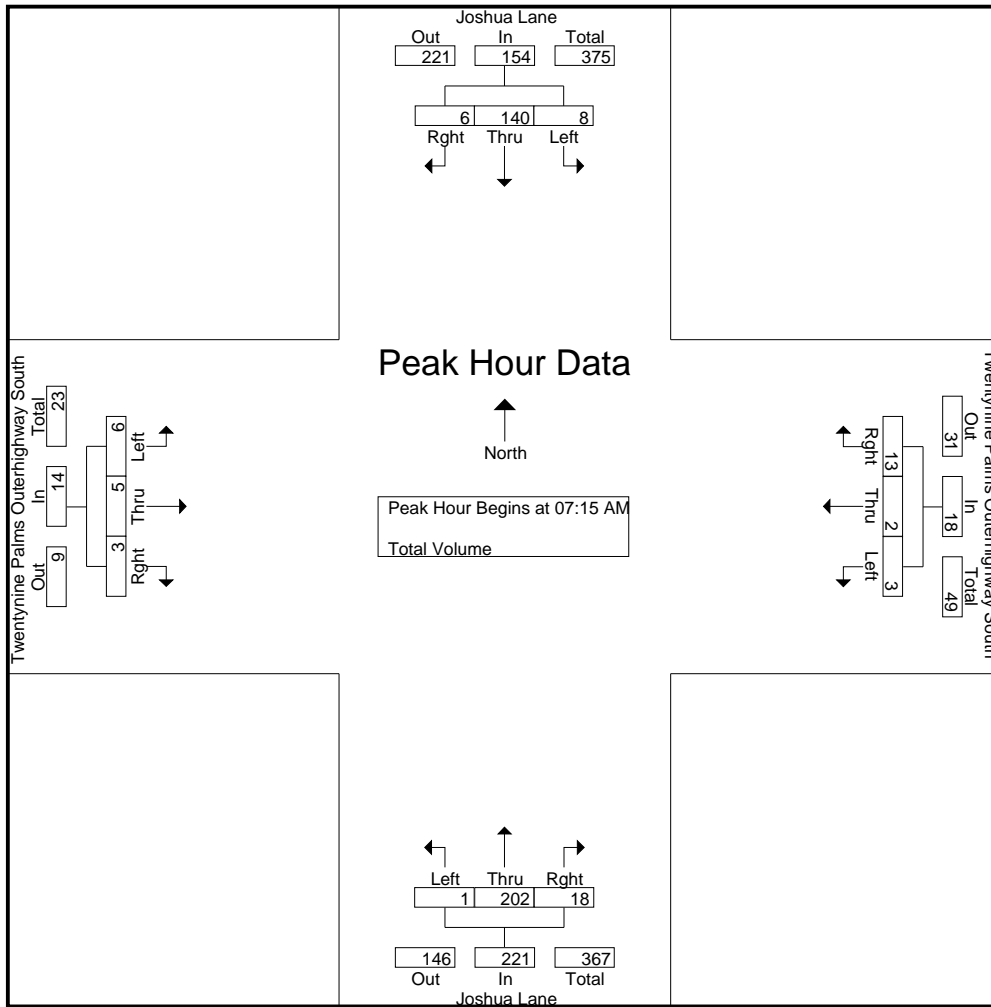
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 Site Code : 00000001
 Start Date : 4/27/2011
 Page No : 1

Groups Printed- Total Volume

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	2	28	2	32	1	1	3	5	0	45	2	47	1	0	0	1	85
07:15 AM	0	28	1	29	0	1	2	3	0	52	3	55	2	0	0	2	89
07:30 AM	3	46	0	49	0	0	4	4	1	42	2	45	1	2	2	5	103
07:45 AM	3	37	2	42	1	1	2	4	0	53	5	58	1	2	0	3	107
Total	8	139	5	152	2	3	11	16	1	192	12	205	5	4	2	11	384
08:00 AM	2	29	3	34	2	0	5	7	0	55	8	63	2	1	1	4	108
08:15 AM	4	25	4	33	0	0	4	4	0	41	6	47	2	0	3	5	89
08:30 AM	5	26	3	34	1	0	5	6	0	44	4	48	2	3	1	6	94
08:45 AM	4	51	1	56	3	0	2	5	0	45	5	50	3	2	0	5	116
Total	15	131	11	157	6	0	16	22	0	185	23	208	9	6	5	20	407
Grand Total	23	270	16	309	8	3	27	38	1	377	35	413	14	10	7	31	791
Apprch %	7.4	87.4	5.2		21.1	7.9	71.1		0.2	91.3	8.5		45.2	32.3	22.6		
Total %	2.9	34.1	2	39.1	1	0.4	3.4	4.8	0.1	47.7	4.4	52.2	1.8	1.3	0.9	3.9	

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:15 AM	0	28	1	29	0	1	2	3	0	52	3	55	2	0	0	2	89
07:30 AM	3	46	0	49	0	0	4	4	1	42	2	45	1	2	2	5	103
07:45 AM	3	37	2	42	1	1	2	4	0	53	5	58	1	2	0	3	107
08:00 AM	2	29	3	34	2	0	5	7	0	55	8	63	2	1	1	4	108
Total Volume	8	140	6	154	3	2	13	18	1	202	18	221	6	5	3	14	407
% App. Total	5.2	90.9	3.9		16.7	11.1	72.2		0.5	91.4	8.1		42.9	35.7	21.4		
PHF	.667	.761	.500	.786	.375	.500	.650	.643	.250	.918	.563	.877	.750	.625	.375	.700	.942

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:15 AM



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				08:00 AM				07:15 AM				08:00 AM			
+0 mins.	3	46	0	49	2	0	5	7	0	52	3	55	2	1	1	4
+15 mins.	3	37	2	42	0	0	4	4	1	42	2	45	2	0	3	5
+30 mins.	2	29	3	34	1	0	5	6	0	53	5	58	2	3	1	6
+45 mins.	4	25	4	33	3	0	2	5	0	55	8	63	3	2	0	5
Total Volume	12	137	9	158	6	0	16	22	1	202	18	221	9	6	5	20
% App. Total	7.6	86.7	5.7		27.3	0	72.7		0.5	91.4	8.1		45	30	25	
PHF	.750	.745	.563	.806	.500	.000	.800	.786	.250	.918	.563	.877	.750	.500	.417	.833

Town of Yucca Valley
 N/S: Joshua Lane
 E/W: Twentynine Palms Outerhighway South
 Weather: Sunny

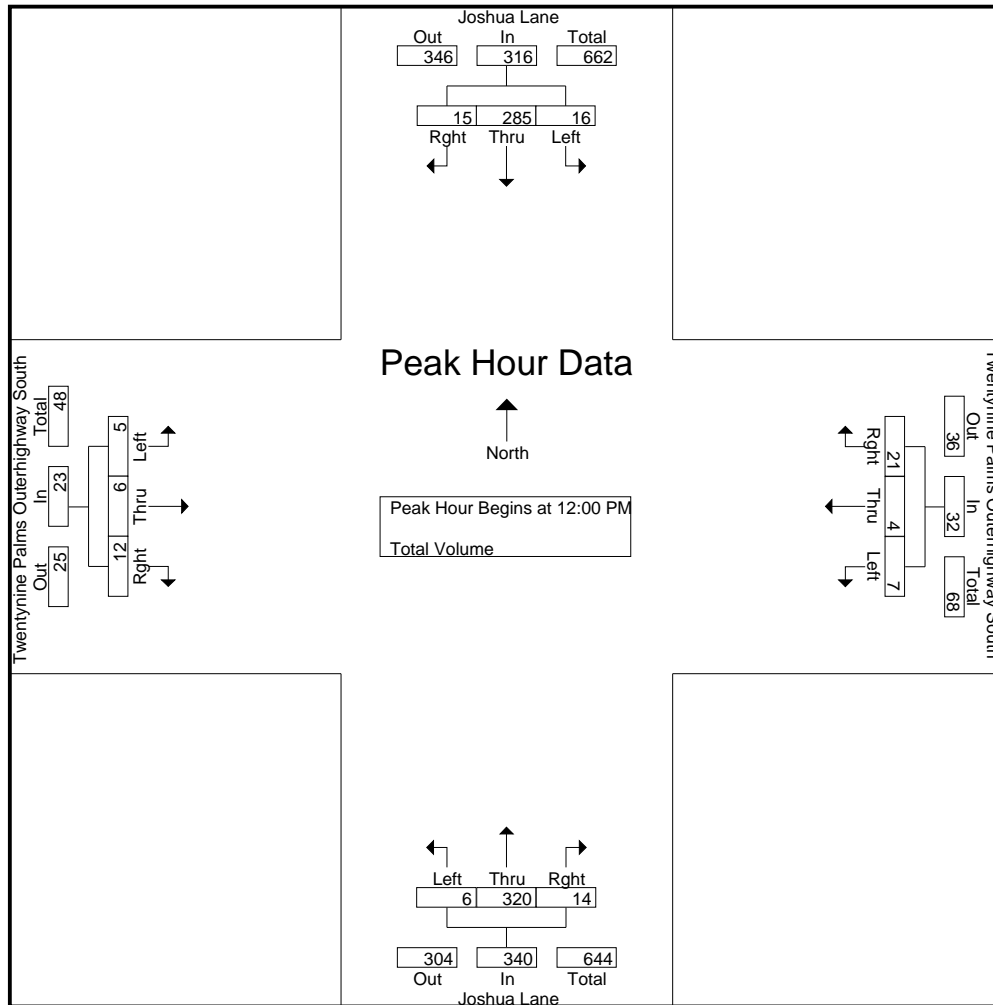
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 Site Code : 00000001
 Start Date : 4/27/2011
 Page No : 1

Groups Printed- Total Volume

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:00 PM	8	64	4	76	1	2	7	10	2	85	2	89	1	3	3	7	182
12:15 PM	1	62	4	67	1	0	2	3	2	91	0	93	3	1	1	5	168
12:30 PM	4	78	5	87	2	1	6	9	1	73	8	82	1	1	5	7	185
12:45 PM	3	81	2	86	3	1	6	10	1	71	4	76	0	1	3	4	176
Total	16	285	15	316	7	4	21	32	6	320	14	340	5	6	12	23	711
01:00 PM	4	72	4	80	3	3	6	12	0	78	4	82	1	2	2	5	179
01:15 PM	4	62	3	69	4	1	9	14	1	65	10	76	4	0	4	8	167
01:30 PM	3	54	3	60	1	1	5	7	2	44	8	54	1	2	3	6	127
01:45 PM	4	69	5	78	2	1	9	12	0	68	4	72	3	1	4	8	170
Total	15	257	15	287	10	6	29	45	3	255	26	284	9	5	13	27	643
Grand Total	31	542	30	603	17	10	50	77	9	575	40	624	14	11	25	50	1354
Apprch %	5.1	89.9	5		22.1	13	64.9		1.4	92.1	6.4		28	22	50		
Total %	2.3	40	2.2	44.5	1.3	0.7	3.7	5.7	0.7	42.5	3	46.1	1	0.8	1.8	3.7	

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:00 PM	8	64	4	76	1	2	7	10	2	85	2	89	1	3	3	7	182
12:15 PM	1	62	4	67	1	0	2	3	2	91	0	93	3	1	1	5	168
12:30 PM	4	78	5	87	2	1	6	9	1	73	8	82	1	1	5	7	185
12:45 PM	3	81	2	86	3	1	6	10	1	71	4	76	0	1	3	4	176
Total Volume	16	285	15	316	7	4	21	32	6	320	14	340	5	6	12	23	711
% App. Total	5.1	90.2	4.7		21.9	12.5	65.6		1.8	94.1	4.1		21.7	26.1	52.2		
PHF	.500	.880	.750	.908	.583	.500	.750	.800	.750	.879	.438	.914	.417	.500	.600	.821	.961

Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 12:00 PM



Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	12:30 PM				12:30 PM				12:00 PM				01:00 PM			
+0 mins.	4	78	5	87	2	1	6	9	2	85	2	89	1	2	2	5
+15 mins.	3	81	2	86	3	1	6	10	2	91	0	93	4	0	4	8
+30 mins.	4	72	4	80	3	3	6	12	1	73	8	82	1	2	3	6
+45 mins.	4	62	3	69	4	1	9	14	1	71	4	76	3	1	4	8
Total Volume	15	293	14	322	12	6	27	45	6	320	14	340	9	5	13	27
% App. Total	4.7	91	4.3		26.7	13.3	60		1.8	94.1	4.1		33.3	18.5	48.1	
PHF	.938	.904	.700	.925	.750	.500	.750	.804	.750	.879	.438	.914	.563	.625	.813	.844

Town of Yucca Valley
 N/S: Joshua Lane
 E/W: Twentynine Palms Outerhighway South
 Weather: Sunny

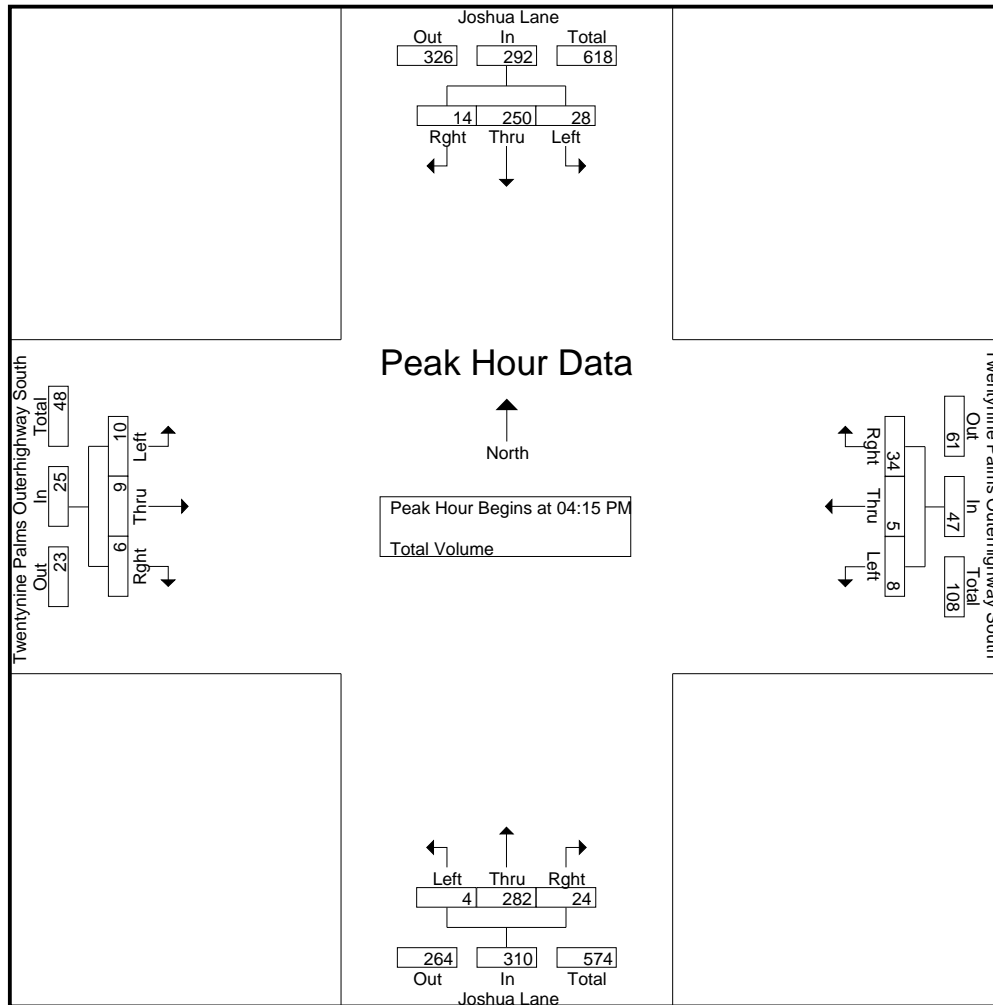
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 Site Code : 00000001
 Start Date : 4/27/2011
 Page No : 1

Groups Printed- Total Volume

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	6	62	3	71	5	2	6	13	0	61	6	67	1	2	4	7	158
04:15 PM	3	65	2	70	1	0	9	10	0	79	5	84	0	4	2	6	170
04:30 PM	8	56	6	70	0	0	11	11	2	57	5	64	3	1	2	6	151
04:45 PM	10	61	4	75	5	2	4	11	0	68	8	76	1	1	1	3	165
Total	27	244	15	286	11	4	30	45	2	265	24	291	5	8	9	22	644
05:00 PM	7	68	2	77	2	3	10	15	2	78	6	86	6	3	1	10	188
05:15 PM	1	61	4	66	3	1	11	15	0	66	10	76	4	1	4	9	166
05:30 PM	1	54	1	56	2	1	9	12	1	66	6	73	1	2	2	5	146
05:45 PM	6	51	5	62	3	0	5	8	0	72	2	74	3	1	2	6	150
Total	15	234	12	261	10	5	35	50	3	282	24	309	14	7	9	30	650
Grand Total	42	478	27	547	21	9	65	95	5	547	48	600	19	15	18	52	1294
Apprch %	7.7	87.4	4.9		22.1	9.5	68.4		0.8	91.2	8		36.5	28.8	34.6		
Total %	3.2	36.9	2.1	42.3	1.6	0.7	5	7.3	0.4	42.3	3.7	46.4	1.5	1.2	1.4	4	

Start Time	Joshua Lane Southbound				Twentynine Palms Outerhighway South Westbound				Joshua Lane Northbound				Twentynine Palms Outerhighway South Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:15 PM	3	65	2	70	1	0	9	10	0	79	5	84	0	4	2	6	170
04:30 PM	8	56	6	70	0	0	11	11	2	57	5	64	3	1	2	6	151
04:45 PM	10	61	4	75	5	2	4	11	0	68	8	76	1	1	1	3	165
05:00 PM	7	68	2	77	2	3	10	15	2	78	6	86	6	3	1	10	188
Total Volume	28	250	14	292	8	5	34	47	4	282	24	310	10	9	6	25	674
% App. Total	9.6	85.6	4.8		17	10.6	72.3		1.3	91	7.7		40	36	24		
PHF	.700	.919	.583	.948	.400	.417	.773	.783	.500	.892	.750	.901	.417	.563	.750	.625	.896

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:15 PM



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:15 PM				04:45 PM				04:45 PM				05:00 PM			
+0 mins.	3	65	2	70	5	2	4	11	0	68	8	76	6	3	1	10
+15 mins.	8	56	6	70	2	3	10	15	2	78	6	86	4	1	4	9
+30 mins.	10	61	4	75	3	1	11	15	0	66	10	76	1	2	2	5
+45 mins.	7	68	2	77	2	1	9	12	1	66	6	73	3	1	2	6
Total Volume	28	250	14	292	12	7	34	53	3	278	30	311	14	7	9	30
% App. Total	9.6	85.6	4.8		22.6	13.2	64.2		1	89.4	9.6		46.7	23.3	30	
PHF	.700	.919	.583	.948	.600	.583	.773	.883	.375	.891	.750	.904	.583	.583	.563	.750

Town of Yucca Valley
 N/S: Old Woman Springs Road (SR-247)
 E/W: Twentynine Palms Highway (SR-62)
 Weather: Sunny

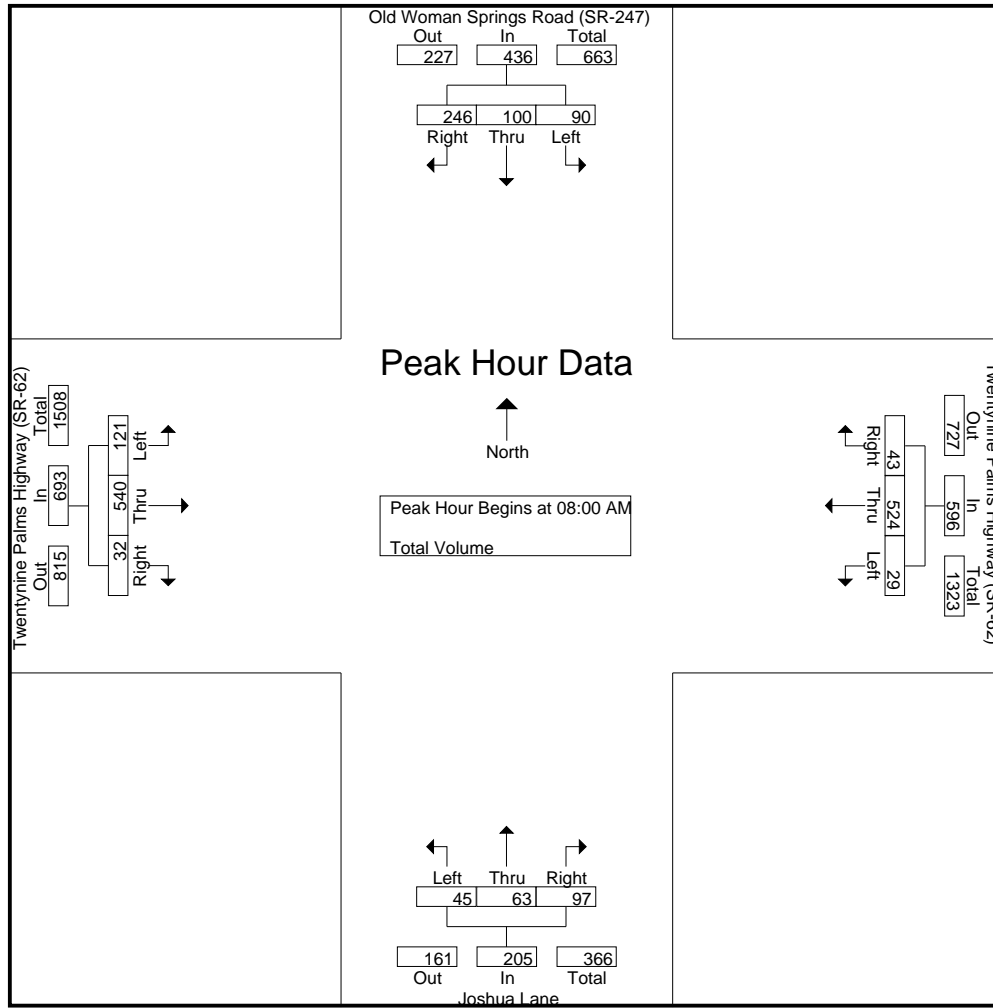
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 Start Date : 4/27/2011
 Page No : 1

Groups Printed- Total Volume

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	17	18	52	87	9	95	7	111	25	15	15	55	18	90	6	114	367
07:15 AM	15	15	54	84	4	122	11	137	20	10	22	52	26	85	9	120	393
07:30 AM	19	32	47	98	8	112	6	126	10	19	16	45	26	118	11	155	424
07:45 AM	21	20	69	110	15	142	14	171	14	26	18	58	24	126	7	157	496
Total	72	85	222	379	36	471	38	545	69	70	71	210	94	419	33	546	1680
08:00 AM	20	25	63	108	6	111	11	128	16	17	28	61	29	126	5	160	457
08:15 AM	21	20	51	92	5	136	2	143	9	12	23	44	28	114	8	150	429
08:30 AM	23	20	60	103	8	132	15	155	8	17	23	48	41	142	7	190	496
08:45 AM	26	35	72	133	10	145	15	170	12	17	23	52	23	158	12	193	548
Total	90	100	246	436	29	524	43	596	45	63	97	205	121	540	32	693	1930
Grand Total	162	185	468	815	65	995	81	1141	114	133	168	415	215	959	65	1239	3610
Apprch %	19.9	22.7	57.4		5.7	87.2	7.1		27.5	32	40.5		17.4	77.4	5.2		
Total %	4.5	5.1	13	22.6	1.8	27.6	2.2	31.6	3.2	3.7	4.7	11.5	6	26.6	1.8	34.3	

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
08:00 AM	20	25	63	108	6	111	11	128	16	17	28	61	29	126	5	160	457
08:15 AM	21	20	51	92	5	136	2	143	9	12	23	44	28	114	8	150	429
08:30 AM	23	20	60	103	8	132	15	155	8	17	23	48	41	142	7	190	496
08:45 AM	26	35	72	133	10	145	15	170	12	17	23	52	23	158	12	193	548
Total Volume	90	100	246	436	29	524	43	596	45	63	97	205	121	540	32	693	1930
% App. Total	20.6	22.9	56.4		4.9	87.9	7.2		22	30.7	47.3		17.5	77.9	4.6		
PHF	.865	.714	.854	.820	.725	.903	.717	.876	.703	.926	.866	.840	.738	.854	.667	.898	.880

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 08:00 AM



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM				07:45 AM				07:15 AM				08:00 AM			
+0 mins.	20	25	63	108	15	142	14	171	20	10	22	52	29	126	5	160
+15 mins.	21	20	51	92	6	111	11	128	10	19	16	45	28	114	8	150
+30 mins.	23	20	60	103	5	136	2	143	14	26	18	58	41	142	7	190
+45 mins.	26	35	72	133	8	132	15	155	16	17	28	61	23	158	12	193
Total Volume	90	100	246	436	34	521	42	597	60	72	84	216	121	540	32	693
% App. Total	20.6	22.9	56.4		5.7	87.3	7		27.8	33.3	38.9		17.5	77.9	4.6	
PHF	.865	.714	.854	.820	.567	.917	.700	.873	.750	.692	.750	.885	.738	.854	.667	.898

Town of Yucca Valley
 N/S: Old Woman Springs Road (SR-247)
 E/W: Twentynine Palms Highway (SR-62)
 Weather: Sunny

File Name : YCVOWS62MD
 Site Code : 00000001
 Start Date : 4/27/2011
 Page No : 1

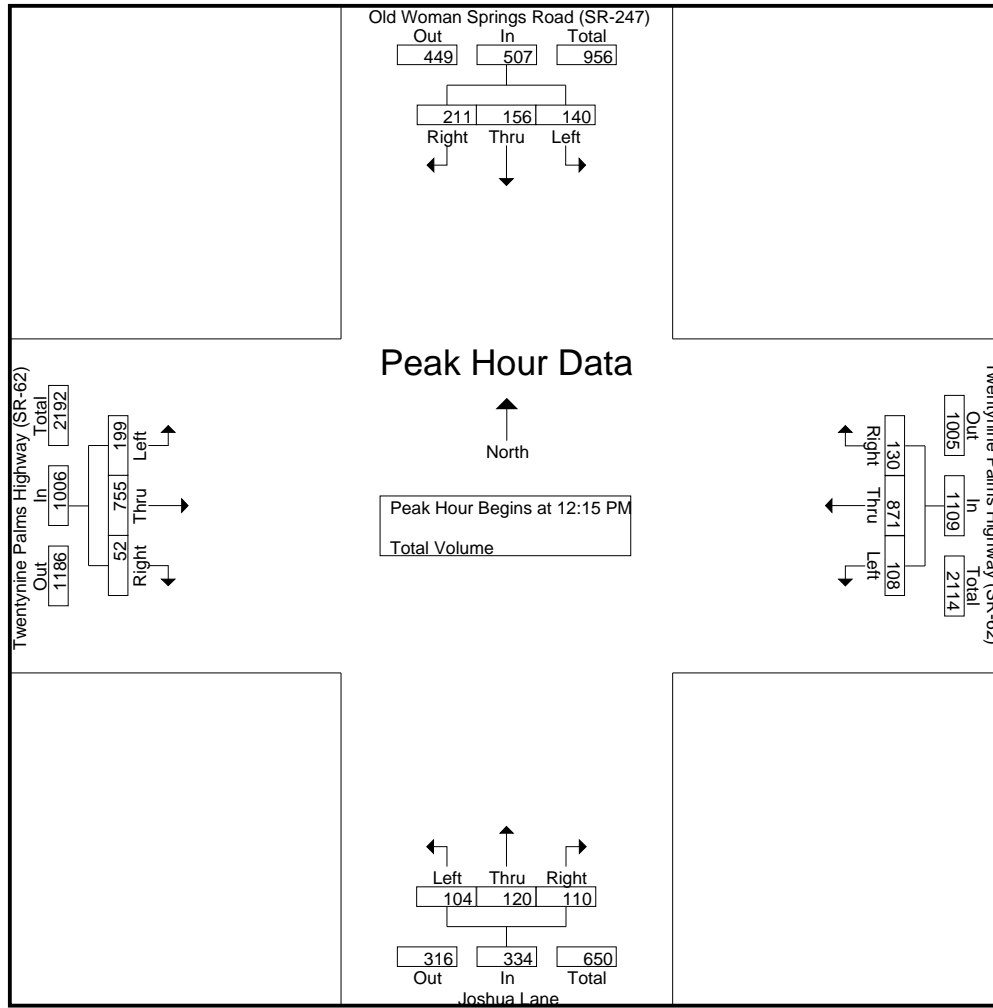
Groups Printed- Total Volume

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:00 PM	32	40	43	115	21	195	24	240	27	29	32	88	51	178	20	249	692
12:15 PM	38	30	56	124	22	212	31	265	26	40	33	99	49	179	12	240	728
12:30 PM	45	45	41	131	37	214	34	285	24	24	30	78	50	177	6	233	727
12:45 PM	30	44	59	133	26	237	28	291	26	29	20	75	48	201	19	268	767
Total	145	159	199	503	106	858	117	1081	103	122	115	340	198	735	57	990	2914
01:00 PM	27	37	55	119	23	208	37	268	28	27	27	82	52	198	15	265	734
01:15 PM	41	40	64	145	16	195	16	227	23	37	22	82	63	180	14	257	711
01:30 PM	33	27	42	102	18	226	33	277	14	21	20	55	44	171	17	232	666
01:45 PM	35	32	42	109	31	197	27	255	30	31	23	84	56	175	17	248	696
Total	136	136	203	475	88	826	113	1027	95	116	92	303	215	724	63	1002	2807
Grand Total	281	295	402	978	194	1684	230	2108	198	238	207	643	413	1459	120	1992	5721
Apprch %	28.7	30.2	41.1		9.2	79.9	10.9		30.8	37	32.2		20.7	73.2	6		
Total %	4.9	5.2	7	17.1	3.4	29.4	4	36.8	3.5	4.2	3.6	11.2	7.2	25.5	2.1	34.8	

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
12:15 PM	38	30	56	124	22	212	31	265	26	40	33	99	49	179	12	240	728
12:30 PM	45	45	41	131	37	214	34	285	24	24	30	78	50	177	6	233	727
12:45 PM	30	44	59	133	26	237	28	291	26	29	20	75	48	201	19	268	767
01:00 PM	27	37	55	119	23	208	37	268	28	27	27	82	52	198	15	265	734
Total Volume	140	156	211	507	108	871	130	1109	104	120	110	334	199	755	52	1006	2956
% App. Total	27.6	30.8	41.6		9.7	78.5	11.7		31.1	35.9	32.9		19.8	75	5.2		
PHF	.778	.867	.894	.953	.730	.919	.878	.953	.929	.750	.833	.843	.957	.939	.684	.938	.963

Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:15 PM



Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:30 PM				12:15 PM				12:00 PM				12:30 PM			
+0 mins.	45	45	41	131	22	212	31	265	27	29	32	88	50	177	6	233
+15 mins.	30	44	59	133	37	214	34	285	26	40	33	99	48	201	19	268
+30 mins.	27	37	55	119	26	237	28	291	24	24	30	78	52	198	15	265
+45 mins.	41	40	64	145	23	208	37	268	26	29	20	75	63	180	14	257
Total Volume	143	166	219	528	108	871	130	1109	103	122	115	340	213	756	54	1023
% App. Total	27.1	31.4	41.5		9.7	78.5	11.7		30.3	35.9	33.8		20.8	73.9	5.3	
PHF	.794	.922	.855	.910	.730	.919	.878	.953	.954	.763	.871	.859	.845	.940	.711	.954

Town of Yucca Valley
 N/S: Old Woman Springs Road (SR-247)
 E/W: Twentynine Palms Highway (SR-62)
 Weather: Sunny

File Name : YCVOWS62PM
 Site Code : 00000001
 Start Date : 4/27/2011
 Page No : 1

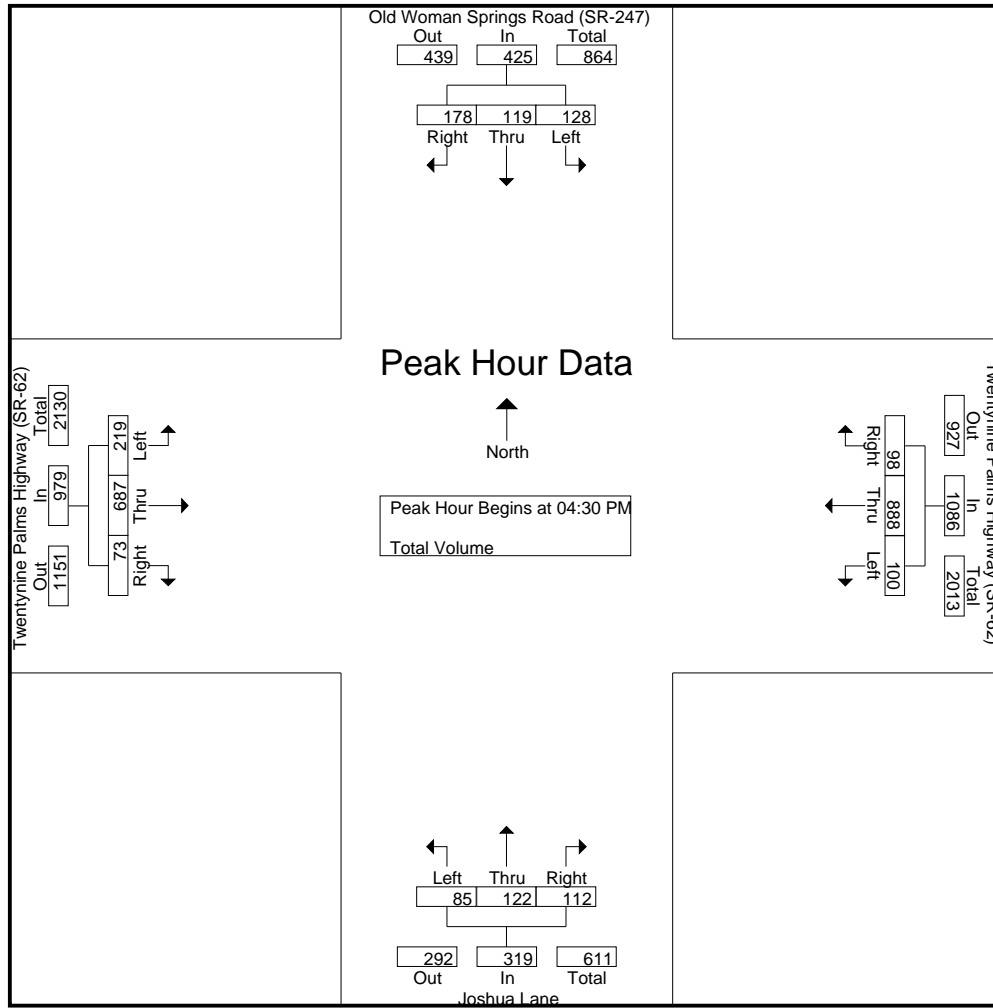
Groups Printed- Total Volume

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	24	34	44	102	23	209	38	270	18	28	28	74	53	183	15	251	697
04:15 PM	36	34	38	108	28	202	18	248	23	32	31	86	56	156	12	224	666
04:30 PM	28	29	50	107	23	213	22	258	19	27	23	69	45	156	13	214	648
04:45 PM	32	27	50	109	29	230	23	282	20	22	33	75	60	175	23	258	724
Total	120	124	182	426	103	854	101	1058	80	109	115	304	214	670	63	947	2735
05:00 PM	29	28	35	92	26	245	27	298	22	38	36	96	55	180	20	255	741
05:15 PM	39	35	43	117	22	200	26	248	24	35	20	79	59	176	17	252	696
05:30 PM	21	23	44	88	14	212	16	242	18	26	28	72	52	173	11	236	638
05:45 PM	25	24	46	95	24	176	17	217	23	28	25	76	58	162	18	238	626
Total	114	110	168	392	86	833	86	1005	87	127	109	323	224	691	66	981	2701
Grand Total	234	234	350	818	189	1687	187	2063	167	236	224	627	438	1361	129	1928	5436
Apprch %	28.6	28.6	42.8		9.2	81.8	9.1		26.6	37.6	35.7		22.7	70.6	6.7		
Total %	4.3	4.3	6.4	15	3.5	31	3.4	38	3.1	4.3	4.1	11.5	8.1	25	2.4	35.5	

Start Time	Old Woman Springs Road (SR-247) Southbound				Twentynine Palms Highway (SR-62) Westbound				Joshua Lane Northbound				Twentynine Palms Highway (SR-62) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	28	29	50	107	23	213	22	258	19	27	23	69	45	156	13	214	648
04:45 PM	32	27	50	109	29	230	23	282	20	22	33	75	60	175	23	258	724
05:00 PM	29	28	35	92	26	245	27	298	22	38	36	96	55	180	20	255	741
05:15 PM	39	35	43	117	22	200	26	248	24	35	20	79	59	176	17	252	696
Total Volume	128	119	178	425	100	888	98	1086	85	122	112	319	219	687	73	979	2809
% App. Total	30.1	28	41.9		9.2	81.8	9		26.6	38.2	35.1		22.4	70.2	7.5		
PHF	.821	.850	.890	.908	.862	.906	.907	.911	.885	.803	.778	.831	.913	.954	.793	.949	.948

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:30 PM				04:45 PM			
+0 mins.	24	34	44	102	28	202	18	248	23	32	31	86	60	175	23	258
+15 mins.	36	34	38	108	23	213	22	258	19	27	23	69	55	180	20	255
+30 mins.	28	29	50	107	29	230	23	282	20	22	33	75	59	176	17	252
+45 mins.	32	27	50	109	26	245	27	298	22	38	36	96	52	173	11	236
Total Volume	120	124	182	426	106	890	90	1086	84	119	123	326	226	704	71	1001
% App. Total	28.2	29.1	42.7		9.8	82	8.3		25.8	36.5	37.7		22.6	70.3	7.1	
PHF	.833	.912	.910	.977	.914	.908	.833	.911	.913	.783	.854	.849	.942	.978	.772	.970

Project:
 W.O.: 11-0058
 Date: 4/29/2011

Intersection: **Dumosa Avenue / SR-62 Twentynine Palms Highway**
 Scenario: Existing, Antelope Trail closed, Senior Apts, Raised Median on Joshua Ln

California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

	Street Name	Critical Approach Speed	Lanes
Major St:	<u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>
Minor St:	<u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

Speed limit or critical speed on major street traffic > 64 km/h (40mph).....

In built up area of isolated community of < 10,000 population.....

or } **RURAL (R)**
 } **URBAN (U)**

WARRANT 1 - Eight Hour Vehicular Volume **SATISFIED** YES NO
 (Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED** YES NO
80% SATISFIED YES NO

		Volume (VPH) ¹								
Minimum Requirements (80% shown in brackets)		8:45 AM- 9:45 AM	9:45 AM- 10:45 AM	10:45 AM- 11:45 AM	11:45 AM- 12:45 PM	12:45 PM- 1:45 PM	1:45 PM- 2:45 PM	2:45 PM- 3:45 PM	3:45 PM- 4:45 PM	
Major St	600 (480)	1,953	2,080	2,241	2,383	2,360	2,396	2370	2,529	
Minor St	150 (120)	74	97	84	73	77	82	86	94	

Condition B - Interruption of Continuous Traffic **100% SATISFIED** YES NO
80% SATISFIED YES NO

		Volume (VPH) ¹								
Minimum Requirements (80% shown in brackets)		8:45 AM- 9:45 AM	9:45 AM- 10:45 AM	10:45 AM- 11:45 AM	11:45 AM- 12:45 PM	12:45 PM- 1:45 PM	1:45 PM- 2:45 PM	2:45 PM- 3:45 PM	3:45 PM- 4:45 PM	
Major St	900 (720)	1,953	2,080	2,241	2,383	2,360	2,396	2370	2,529	
Minor St	75 (60)	74	97	84	73	77	82	86	94	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

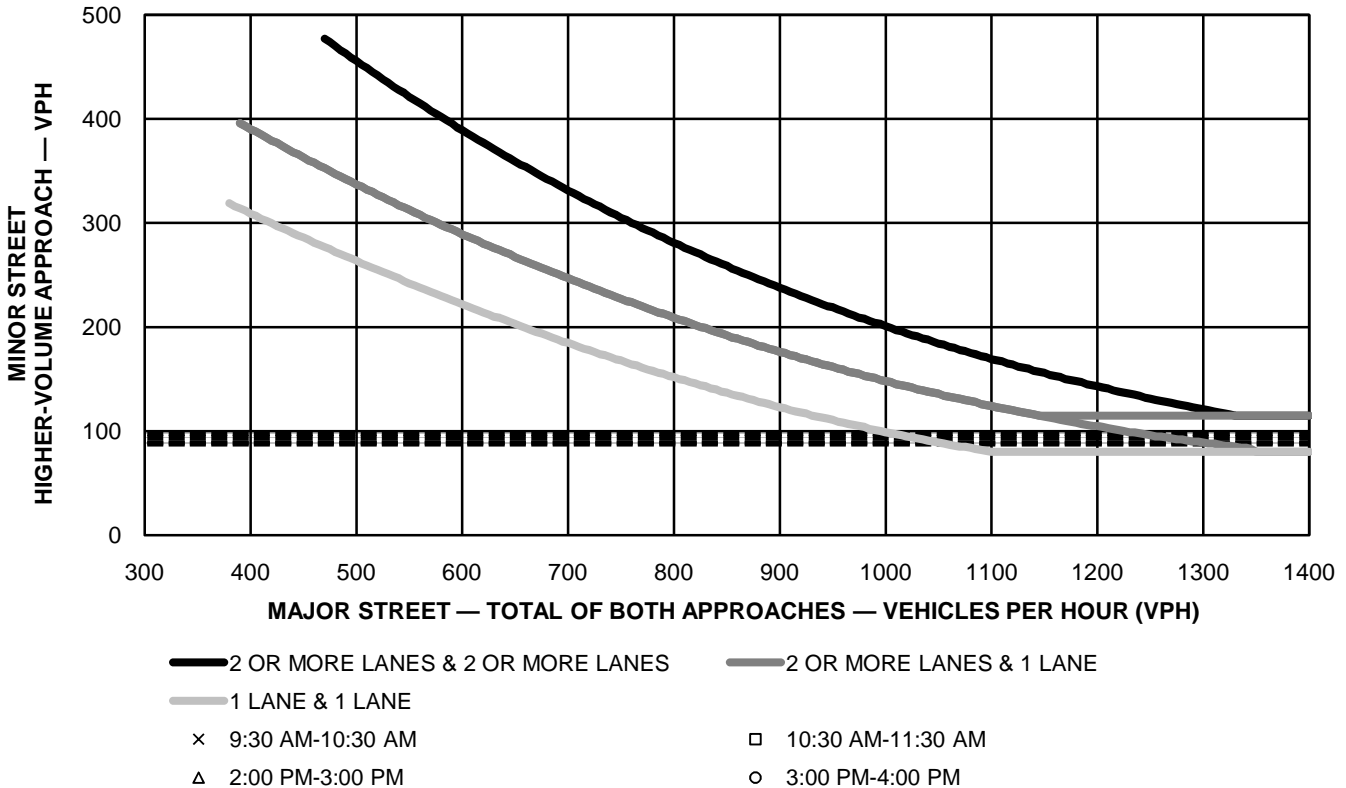
California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

Street Name	Critical Approach Speed	Lanes	Volume (VPH) ¹					
			9:30 AM-10:30 AM	10:30 AM-11:30 AM	2:00 PM-3:00 PM	3:00 PM-4:00 PM		
Major St: <u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>	<u>2,026</u>	<u>2,185</u>	<u>2,386</u>	<u>2,434</u>		
Minor St: <u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>	<u>94</u>	<u>89</u>	<u>88</u>	<u>98</u>		

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

- Speed limit or critical speed on major street traffic > 64 km/h (40mph)..... } **RURAL (R)**
or
In built up area of isolated community of < 10,000 population..... }
 URBAN (U)



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED YES NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

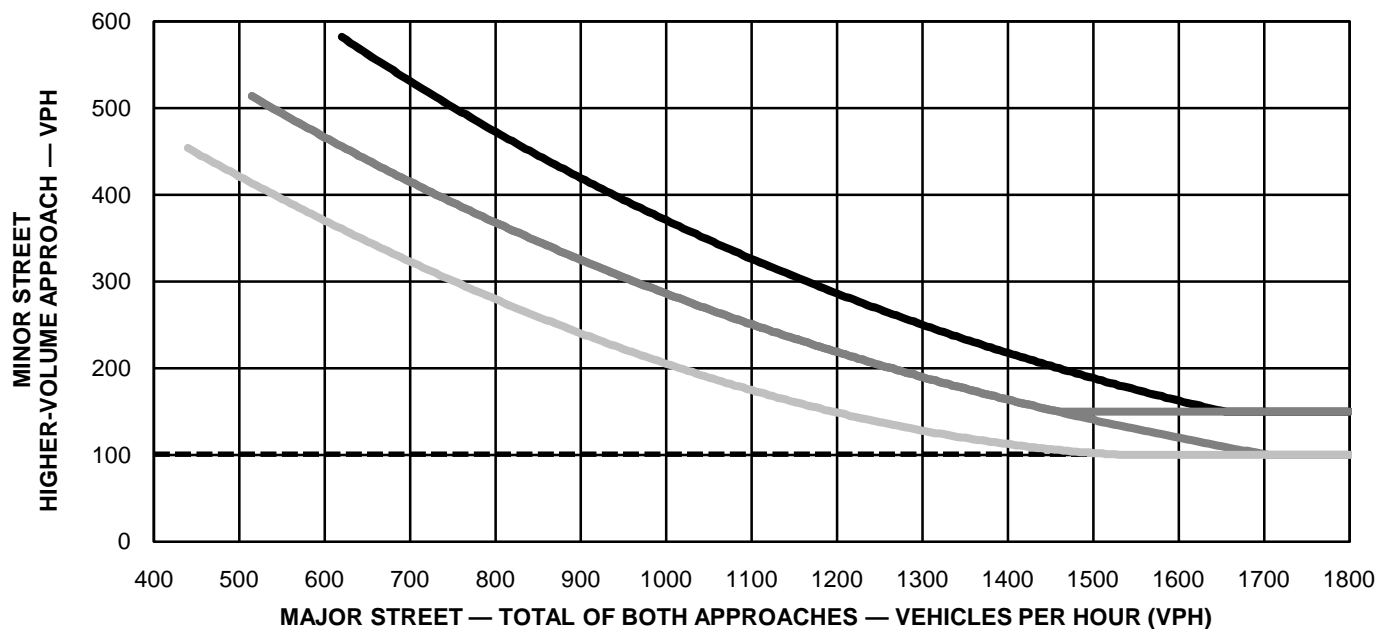
California MUTCD (FHWA's MUTCD 2003 including Revisions 1 and 2, as amended for use in California)

Figure 4C-3. Warrant 3, Peak Hour

	Street Name	Critical Approach Speed	Lanes	Volume (VPH) ¹ 10:15 AM-11:15 AM
Major St:	<u>SR-62 Twentynine Palms Hwy</u>	<u>40 mph</u>	<u>2</u>	<u>2,123</u>
Minor St:	<u>Dumosa Avenue</u>	<u>25 mph</u>	<u>1</u>	<u>101</u>

¹ Volume for major street is total volume of both approaches. Volume for minor street is the volume of higher-volume approach.

- Speed limit or critical speed on major street traffic > 64 km/h (40mph)..... } **RURAL (R)**
or
In built up area of isolated community of < 10,000 population..... }
 URBAN (U)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

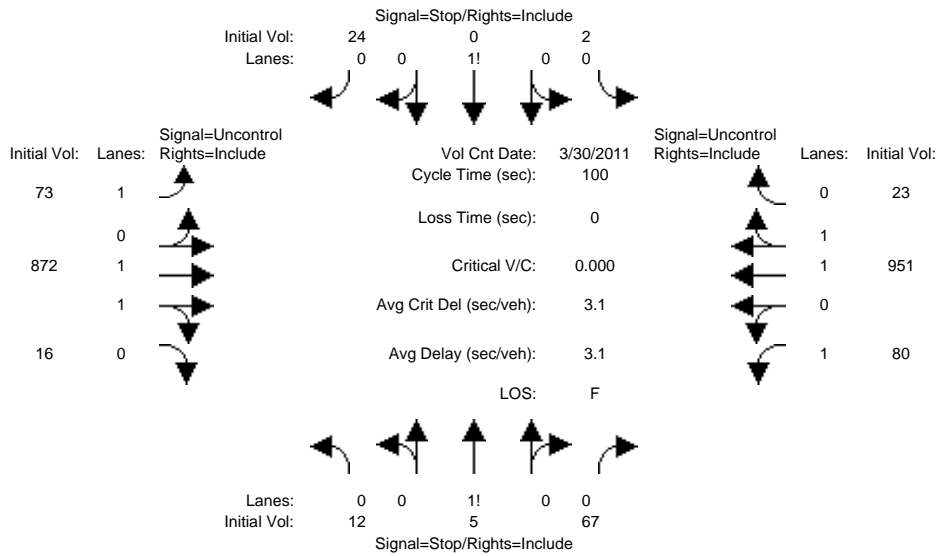
WARRANT 3 - Peak Hour

SATISFIED YES NO

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

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

Intersection #1: Dumosa Ave / SR-62 Twentynine Palms Hwy



Street Name: Dumosa Avenue SR-62 Twentynine Palms Highway
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:	>> Count	Date:	30 Mar 2011	<<	10:15-11:15 AM
Base Vol:	12 5 67	2 0 24	73 872 16	80 951 23	
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	12 5 67	2 0 24	73 872 16	80 951 23	
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj:	0.97 0.97 0.97	0.97 0.97 0.97	0.97 0.97 0.97	0.97 0.97 0.97	
PHF Volume:	12 5 69	2 0 25	75 900 17	83 981 24	
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0	
Final Volume:	12 5 69	2 0 25	75 900 17	83 981 24	

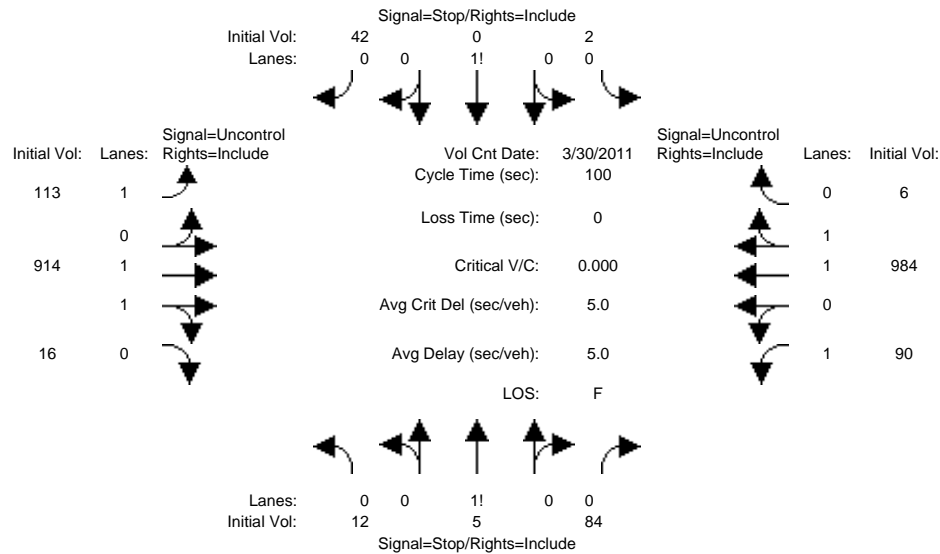
Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	7.5	6.5	6.9	7.5	6.5	6.9	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflct Vol:	1714	2228	458	1761	2225	502	1005	xxxx	xxxxx	916	xxxx	xxxxx
Potent Cap.:	58	42	550	54	43	514	685	xxxx	xxxxx	740	xxxx	xxxxx
Move Cap.:	46	34	550	35	34	514	685	xxxx	xxxxx	740	xxxx	xxxxx
Volume/Cap:	0.27	0.15	0.13	0.06	0.00	0.05	0.11	xxxx	xxxx	0.11	xxxx	xxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.9	xxxx	xxxxx	10.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	B	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	
Shared Cap.:	xxxx	159	xxxxx	xxxx	250	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shared Queue:	xxxxx	2.8	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	52.0	xxxxx	xxxxx	21.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	C	*	*	*	*	*	*	*
ApproachDel:	52.0			21.1			xxxxxxx			xxxxxxx		
ApproachLOS:	F			C			*			*		

Level Of Service Computation Report
 2000 HCM Unsignalized (Base Volume Alternative)
 Existing, Antelope Trail closed, Senior Apts Scenario

Intersection #1: Dumosa Ave / SR-62 Twentynine Palms Hwy



Street Name: Dumosa Avenue SR-62 Twentynine Palms Highway
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Volume Module:	>> Count	Date:	30 Mar 2011	<<	10:15-11:15 AM
Base Vol:	12 5 84		2 0 42		113 914 16 90 984 6
Growth Adj:	1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:	12 5 84		2 0 42		113 914 16 90 984 6
User Adj:	1.00 1.00 1.00		1.00 1.00 1.00		1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:	0.97 0.97 0.97		0.97 0.97 0.97		0.97 0.97 0.97 0.97 0.97 0.97
PHF Volume:	12 5 86		2 0 43		116 940 16 93 1012 6
Reduct Vol:	0 0 0		0 0 0		0 0 0 0 0 0
Final Volume:	12 5 86		2 0 43		116 940 16 93 1012 6

Critical Gap Module:

Critical Gp:	7.5 6.5 6.9	7.5 6.5 6.9	4.1	xxxx	xxxxxx	4.1	xxxx	xxxxxx
FollowUpTim:	3.5 4.0 3.3	3.5 4.0 3.3	2.2	xxxx	xxxxxx	2.2	xxxx	xxxxxx

Capacity Module:

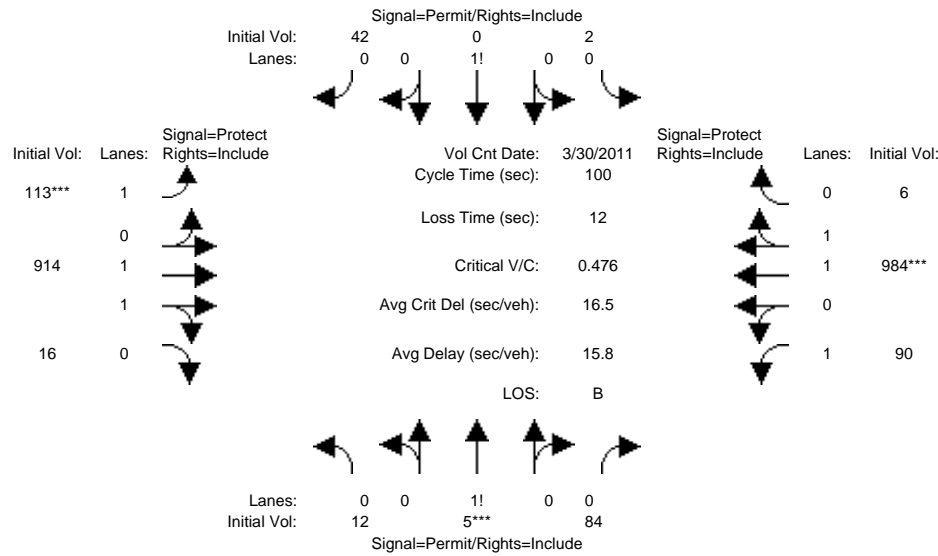
Cnflct Vol:	1871 2383 478	1905 2388 509	1018	xxxx	xxxxxx	956	xxxx	xxxxxx
Potent Cap.:	45 35 539	43 34 515	689	xxxx	xxxxxx	727	xxxx	xxxxxx
Move Cap.:	33 25 539	24 25 515	689	xxxx	xxxxxx	727	xxxx	xxxxxx
Volume/Cap:	0.38 0.20 0.16	0.09 0.00 0.08	0.17	xxxx	xxxx	0.13	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	0.6	xxxx	xxxxxx	0.4	xxxx	xxxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	11.3	xxxx	xxxxxx	10.7	xxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	B	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	140	xxxxxx	xxxx	267	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
SharedQueue:	xxxxxx	4.4	xxxxxx	xxxxxx	0.6	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	82.0	xxxxxx	xxxxxx	21.2	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	F	*	*	C	*	*	*	*	*	*	*
ApproachDel:		82.0			21.2		xxxxxxx		xxxxxxx			
ApproachLOS:		F			C		*		*		*	

Level Of Service Computation Report
 2000 HCM Operations (Base Volume Alternative)
 Existing, Antelope Trail closed, Senior Apts, Raised Median on Joshua Ln Scenario

Intersection #1: Dumosa Ave / SR-62 Twentynine Palms Hwy



Street Name: Dumosa Avenue SR-62 Twentynine Palms Highway
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 7 7 7 7 7 7 7 7 7 7 7

Volume Module: >> Count Date: 30 Mar 2011 << 10:15-11:15 AM

Base Vol:	12	5	84	2	0	42	113	914	16	90	984	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	12	5	84	2	0	42	113	914	16	90	984	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	12	5	86	2	0	43	116	940	16	93	1012	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	12	5	86	2	0	43	116	940	16	93	1012	6
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	12	5	86	2	0	43	116	940	16	93	1012	6

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.84	0.84	0.84	0.85	1.00	0.85	0.93	0.93	0.93	0.93	0.93	0.93
Lanes:	0.12	0.05	0.83	0.05	0.00	0.95	1.00	1.97	0.03	1.00	1.99	0.01
Final Sat.:	190	79	1328	73	0	1533	1769	3467	61	1769	3513	21

Capacity Analysis Module:

Vol/Sat:	0.07	0.07	0.07	0.03	0.00	0.03	0.07	0.27	0.27	0.05	0.29	0.29
Crit Moves:	****						****			****		
Green/Cycle:	0.14	0.14	0.14	0.14	0.00	0.14	0.14	0.59	0.59	0.15	0.61	0.61
Volume/Cap:	0.48	0.48	0.48	0.21	0.00	0.21	0.48	0.46	0.46	0.34	0.48	0.48
Uniform Del:	39.9	39.9	39.9	38.3	0.0	38.3	39.8	11.5	11.5	37.9	10.9	10.9
IncrementDel:	1.6	1.6	1.6	0.5	0.0	0.5	1.5	0.2	0.2	0.8	0.2	0.2
InitQueueDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.5	41.5	41.5	38.8	0.0	38.8	41.2	11.6	11.6	38.7	11.1	11.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.5	41.5	41.5	38.8	0.0	38.8	41.2	11.6	11.6	38.7	11.1	11.1
LOS by Move:	D	D	D	D	A	D	D	B	B	D	B	B
HCM2kAvgQ:	4	4	4	1	0	1	4	9	9	3	9	9