Miller Road Traffic Analysis

I-10 to Yuma Road

BUCKEYE ARIZONA

URS

August 21, 2007

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Prepared for the Town of Buckeye

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URS

Executive Summary

Miller Road in Buckeye, Arizona is planned as a major arterial, with three lanes in each direction, and is expected to carry approximately 35,000 vehicles per day in 2030. Limited access to Miller Road is to be provided, restricting access to right turns only between the realigned Yuma Road and I-10. A traffic signal at Pima Street has been proposed to provide full access to the Love's Travel Stop, just south of I-10.

The intersections along Miller Road between I-10 and the realigned Yuma Road were analyzed with 2030 forecasted volumes using Synchro and SimTraffic to analyze the effect of placing a traffic signal at the intersection of Pima Street and Miller Road. The northbound and southbound through movement delay in the morning and evening peak period at the signalized intersections along Miller Road is shown in Table A. The addition of a signal at Pima Street added a significant amount of delay in the simulation to Miller Road traffic in both directions during the morning and in the off-peak direction evening peak hours. Traffic in the peak direction is not significantly impacted by the additional signal in the simulation during the evening peak hour. The Pima Street signal metered southbound traffic in the evening peak hour simulation, reducing the delay experienced at Yuma Road.

Table A: Simulated Delay on Miller Road

Miller Road Intersection	*No Pima Signal* Delay (s/veh)		*With Pima Signal* Delay (s/veh)	
	Northbound	Southbound	Northbound	Southbound
Westbound I-10 Ramps	22.9 (10.8)	31.1 (69.5)	21.8 (11.7)	30.2 (85.0)
Eastbound I-10 Ramps	15.2 (12.2)	25.3 (7.4)	14.7 (13.0)	19.2 (7.6)
Pima Street	-	-	25.6 (14.1)	4.4 (7.0)
Yuma Road	64.2 (29.3)	17.2 (25.8)	51.1 (28.4)	20.0 (18.6)
Total	102.3 (52.3)	73.6 (102.7)	113.2 (67.2)	73.8 (118.2)

Note 1: Values presented in 'AM (PM)' format.
Note 2: Delay obtained from SimTraffic simulation

Typically, the ideal spacing between traffic signals is approximately one-half mile. As the proposed signals are much more closely spaced along Miller Road, the effectiveness of coordination is compromised resulting in delay. With closely spaced signals, synchronization is generally provided for the peak direction of traffic so that the delay is shifted to the lesser, off-peak direction (opposite the dominant direction) traffic.

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1.0 Introduction

This report provides an analysis of Miller Road, from Durango Street to I-10 in Buckeye, Arizona. Miller Road is projected to be widened to six lanes, attracting a large traffic volume to the corridor. This report compares the impact of the proposed traffic signal at Miller Road and Pima Street on travel in the area. The study area for this report is shown in Figure 1-1.

Miller Road is planned to be the main north-south thoroughfare in the Town of Buckeye, and is expected to attract 35,000 vehicles per day. This report analyzes a segment approximately one-half mile long between the westbound ramps of I-10 and the intersection with the realigned Yuma Road, located at the current intersection with Durango Street.

The intersection of Miller Road and Yuma Road will be signalized, and a solid median will be constructed on Miller Road, limiting adjacent property access to right turns only. This report will analyze the impact of the proposed signalization of the intersection of Miller Road and Pima Street, providing more proximate left turn access to Love's Travel Stop, south of I-10.

This report contains an analysis of the existing conditions and a comparison of the future conditions with and without a traffic signal at Pima Street and Miller Road using traffic simulation and methods described in the *Highway Capacity Manual*[1].

[1] Highway Capacity Manual, Transportation Research Board, 2000

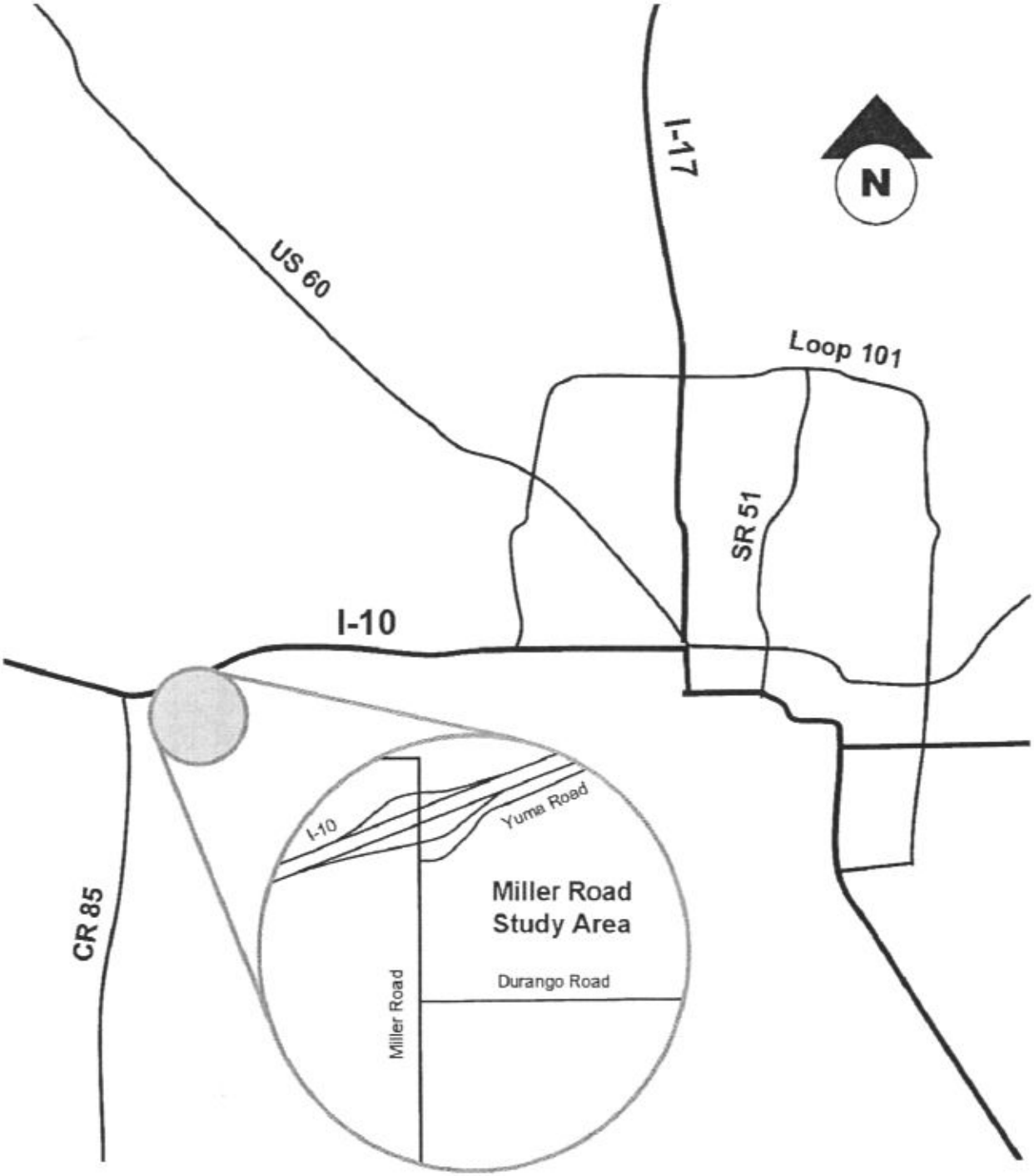


Figure 1-1: Miller Road Traffic Analysis Study Area

2.0 Existing Traffic Conditions

Miller Road currently maintains one lane in each direction and a two-way left-turn lane (TWLTL) in the study area. Full access is provided at the intersections with I-10, Yuma Road, the driveways to Love's Travel Stop, Pima Street, and Durango Street. Miller Road traffic is uninterrupted, and the ramps, side streets and driveways are stop controlled. Love's Travel Stop contains a weigh station, and experiences heavy truck volumes. Truck queues forming at the weigh station often back up onto Miller Road. Travel is dominant northbound and eastbound directions during the morning peak hour, and southbound and westbound during the evening peak hour.

2.1 Traffic Data

Traffic counts were obtained from the Yuma Road Realignment Study performed by SouthWest Traffic Engineering in November 2006. Additional counts were performed by Traffic Research and Analysis, Inc. in July 2007. A 3% growth factor was applied to the 2006 counts to project the existing conditions. The existing peak hour turning movement volumes used in this report are shown in Figure 2-1.

A peak hour factor of 0.82 was obtained from the traffic counts. A vehicle classification study provided a heavy vehicle factor of 13% for Miller Road.

The traffic counts obtained for this report are available in Appendix D.

2.2 Operational Analysis

The existing intersections were analyzed using Synchro[2]. The calculated delay and level of service (LOS) for the stop controlled approaches of the study intersections is shown in Table 2-1. Each controlled approach operates with an LOS of C or better, with the exception of the westbound off ramp from I-10. Heavy left turning volumes from the ramp were recorded during the evening peak hour, causing significant delay and queuing. Detailed analysis is available in Appendix A.

[2] Synchro 7, Trafficware Ltd.

Table 2-1: Existing Intersection Levels of Service

Miller Road Intersection	Average Delay (s/veh)	LOS
Westbound I-10 Ramps	13.6 (39.6)	B (E)
Eastbound I-10 Ramps	11.2 (14.9)	B (B)
Yuma Road	19.6 (20.7)	C (C)
Love's Travel Stop Entrance	15.1 (14.8)	C (B)
Love's Travel Stop Exit	14.0 (15.4)	B (C)
Pima Road	13.2 (13.2)	B (B)

Note 1: Analysis Does Not Include Free Flow Approaches.

Note 2: Values presented in 'AM (PM)' format.

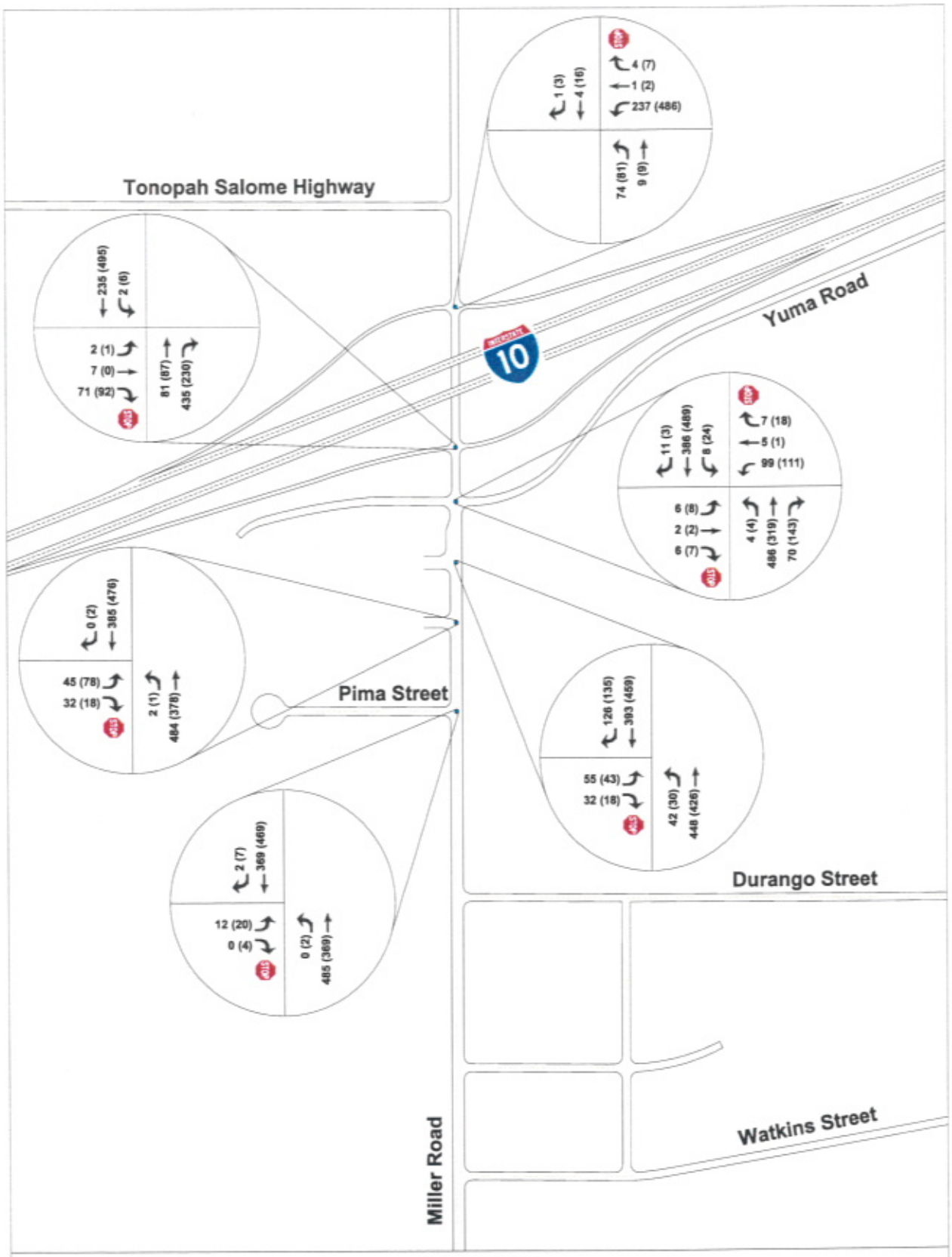


Figure 2-1
Existing Peak Hour Volumes

3.0 Future Traffic Conditions

Miller Road is planned to be widened from its current configuration to a major arterial cross section, containing three lanes in each direction and a continuous median. Yuma Road is expected to be realigned and widened, intersecting Miller Road at the existing intersection with Durango Street. Traffic signals are expected to be installed at the I-10 ramps on Miller Road, and at the intersection of Miller Road and the realigned Yuma Road. Access to the Love's Travel Stop will be restricted to right turns only. Pima Street will be limited to right turns only, or will be granted full access and a traffic signal. This analysis will investigate the effects of these two access options.

3.1 Traffic Data

Forecasted traffic volumes along Miller Road and Yuma Road for the 2030 design year were obtained from the Monte Verde Traffic Impact Analysis, performed by Task Engineering in 2004. The traffic volumes at the Love's Travel Stop driveways, Pima Street, and the western leg of the existing Yuma Road were obtained by applying an annual growth factor of 3% to the existing counts. Left turning vehicles from these approaches were allocated to the realigned Yuma Road in the scenario excluding the signal at Pima Street, and moved to Pima Street in the scenario including the proposed signal. A peak hour factor of 0.90 was assumed for the design year, to account for the more urban traffic patterns expected. A heavy vehicle factor of 13% was used for the intersections used by Love's Travel Stop, and 8% for the intersection with Yuma Road.

3.2 Operational Analysis

The scenarios with and without the signal at Pima Street were analyzed with a design year of 2030 using Synchro. The delay and LOS for each intersection was calculated to provide a comparison between the two alternatives. The lane configuration at each intersection was assumed based on the projected volumes, and were consistent between the scenarios. The delay at the stop controlled intersections is based solely on the controlled approaches. A travel speed of 40 mph was assumed for Miller Road and Yuma Road. A signal cycle length of 120 seconds was used to analyze each signalized intersection.

Figure 3-1
2030 Design Hour Volumes Without Pima Signal

3.2.1 No Pima Signal

The design hour turning movement volumes used in this scenario are shown in Figure 3-1. The results of the signalized intersection analysis of the study area with restricted access at Pima Street are shown in Table 3-1. Detailed analysis of this scenario is provided in Appendix B. Note that the delay at Pima Street is only experienced on the side street.

Table 3-1: 2030 Intersection Levels of Service without Pima Signal

Miller Road Intersection	Total	Approach			
		Eastbound	Westbound	Northbound	Southbound
Westbound I-10 Ramps					
Delay (seconds/vehicle)	29.2 (70.8)		40.7 (109.7)	19.1 (35.3)	31.4 (64)
Level of Service	C (E)		D (F)	B (D)	C (E)
Eastbound I-10 Ramps					
Delay (seconds/vehicle)	49.4 (26.1)	55.8 (54.0)		59.6 (43.8)	26.9 (7.5)
Level of Service	D (C)	E (D)		E (D)	C (A)
Love's Travel Stop Entrance					
Delay (seconds/vehicle)	9.2 (11.0)	9.2 (11.0)			
Level of Service	A (B)	A (B)			
Love's Travel Stop Exit					
Delay (seconds/vehicle)	9.1 (11.0)	9.1 (11.0)			
Level of Service	A (B)	A (B)			
Pima Street					
Delay (seconds/vehicle)	10.7 (10.6)	10.7 (10.6)			
Level of Service	B (B)	B (B)			
Yuma Road					
Delay (seconds/vehicle)	34.1 (40.5)	47.3 (62.3)	50.7 (63.8)	35.1 (34.5)	15.4 (29.1)
Level of Service	C (D)	D (E)	D (E)	D (C)	B (C)

Note: Values presented in 'AM (PM)' format.

3.2.2 With Pima Signal

The design hour turning movement volumes used in this scenario are shown in Figure 3-2. The results of the signalized intersection analysis of the study area with full access at Pima Street are shown in Table 3-2. Detailed analysis of this scenario is provided in Appendix C.

Table 3-2: 2030 Intersection Levels of Service with Pima Signal

Miller Road Intersection	Total	Approach			
		Eastbound	Westbound	Northbound	Southbound
Westbound I-10 Ramps					
Delay (seconds/vehicle)	29.4 (71.1)		40.7 (109.7)	19.5 (36.7)	31.4 (65.2)
Level of Service	C (E)		D (F)	B (D)	C (E)
Eastbound I-10 Ramps					
Delay (seconds/vehicle)	30.6 (21.4)	52.3 (54.0)		28.1 (31.8)	23.4 (7.6)
Level of Service	C (C)	D (D)		C (C)	C (A)
Love's Travel Stop Entrance					
Delay (seconds/vehicle)	9.1 (11.0)	9.1 (11.0)			
Level of Service	A (B)	A (B)			
Love's Travel Stop Exit					
Delay (seconds/vehicle)	9.3 (11.0)	9.3 (11.0)			
Level of Service	A (B)	A (B)			
Pima Street					
Delay (seconds/vehicle)	7.6 (13.1)	54.4 (54.2)		3.7 (13.2)	2.6 (8.4)
Level of Service	A (B)	D (D)		A (B)	A (A)
Yuma Road					
Delay (seconds/vehicle)	31.5 (27.1)	46.4 (48.8)	42.4 (45.7)	35.6 (25.5)	10.8 (16.4)
Level of Service	C (C)	D (D)	D (D)	D (C)	B (B)

Note: Values presented in 'AM (PM)' format.

3.2.3 Comparison of Scenarios

The morning and evening peak hours of the two scenarios were simulated using SimTraffic[3] to determine the effect of the additional signal on the progression of travel on Miller Road. Five fifteen-minute simulations were averaged for each scenario to obtain the control delay at the proposed traffic signals. Table 3-3 shows the control delay of the northbound and southbound through movements simulated at the study intersections for the two scenarios in the morning and evening peak hours. The simulation indicates that the addition of a traffic signal at Pima Street would cause a significant increase in delay in the off-peak direction during the peak hours, but only a slight increase in the peak direction during the evening peak hour. Peak direction traffic is metered at Yuma Road in the simulation by the Pima Street signal, reducing the delay at the next signal in the progression. This metering does not have a positive effect on the approaches in the off-peak direction in the simulation, causing the increase in delay during the evening peak hour. The results of the simulations are provided in Appendix B and Appendix C.

[3] SimTraffic 7, Trafficware Ltd.

Table 3-3: Simulated Delay on Miller Road

Miller Road Intersection	*No Pima Signal* Delay (s/veh)		*With Pima Signal* Delay (s/veh)	
	Northbound	Southbound	Northbound	Southbound
Westbound I-10 Ramps	22.9 (10.8)	31.1 (69.5)	21.8 (11.7)	30.2 (85.0)
Eastbound I-10 Ramps	15.2 (12.2)	25.3 (7.4)	14.7 (13.0)	19.2 (7.6)
Pima Street	-	-	25.6 (14.1)	4.4 (7.0)
Yuma Road	64.2 (29.3)	17.2 (25.8)	51.1 (28.4)	20.0 (18.6)
Total	102.3 (52.3)	73.6 (102.7)	113.2 (67.2)	73.8 (118.2)

Note 1: Values presented in 'AM (PM)' format.

Note 2: Delay obtained from SimTraffic simulation

The simulated 95th percentile queues are provided in Table 3-4. The results did not indicate a significant change in queuing at the intersections between the two scenarios.

Table 3-4: Simulated 95th Percentile Queues

Miller Road Intersection	Approach							
	Eastbound		Westbound		Northbound		Southbound	
	↰	↱	↰	↱	↰	↱	↰	↱
Westbound I-10 Ramps								
No Pima Signal			271' (416')	828' (2448')	205' (355')			216' (328')
With Pima Signal			303' (506')	1258' (2543')	296' (383')			193' (219')
Eastbound I-10 Ramps								
No Pima Signal	1170' (457')	364' (270')				170' (408')	258' (225')	
With Pima Signal	1164' (447')	175' (247')				395' (421')	273' (249')	
Love's Travel Stop Entrance								
No Pima Signal		61' (57')						
With Pima Signal		71' (59')						
Love's Travel Stop Exit								
No Pima Signal		47' (65')						
With Pima Signal		54' (49')						
Pima Street								
No Pima Signal		81' (24')						
With Pima Signal	428' (356')	178' (14')			123' (163')			
Yuma Road								
No Pima Signal	383' (383')	158' (136')	104' (269')	123' (219')	312' (364')	218' (202')	97' (198')	100' (172')
With Pima Signal	195' (102')	179' (176')	110' (218')	118' (175')	243' (166')	217' (130')	104' (198')	127' (144')

Note 1: Values presented in 'AM (PM)' format.

Note 2: Delay obtained from SimTraffic simulation

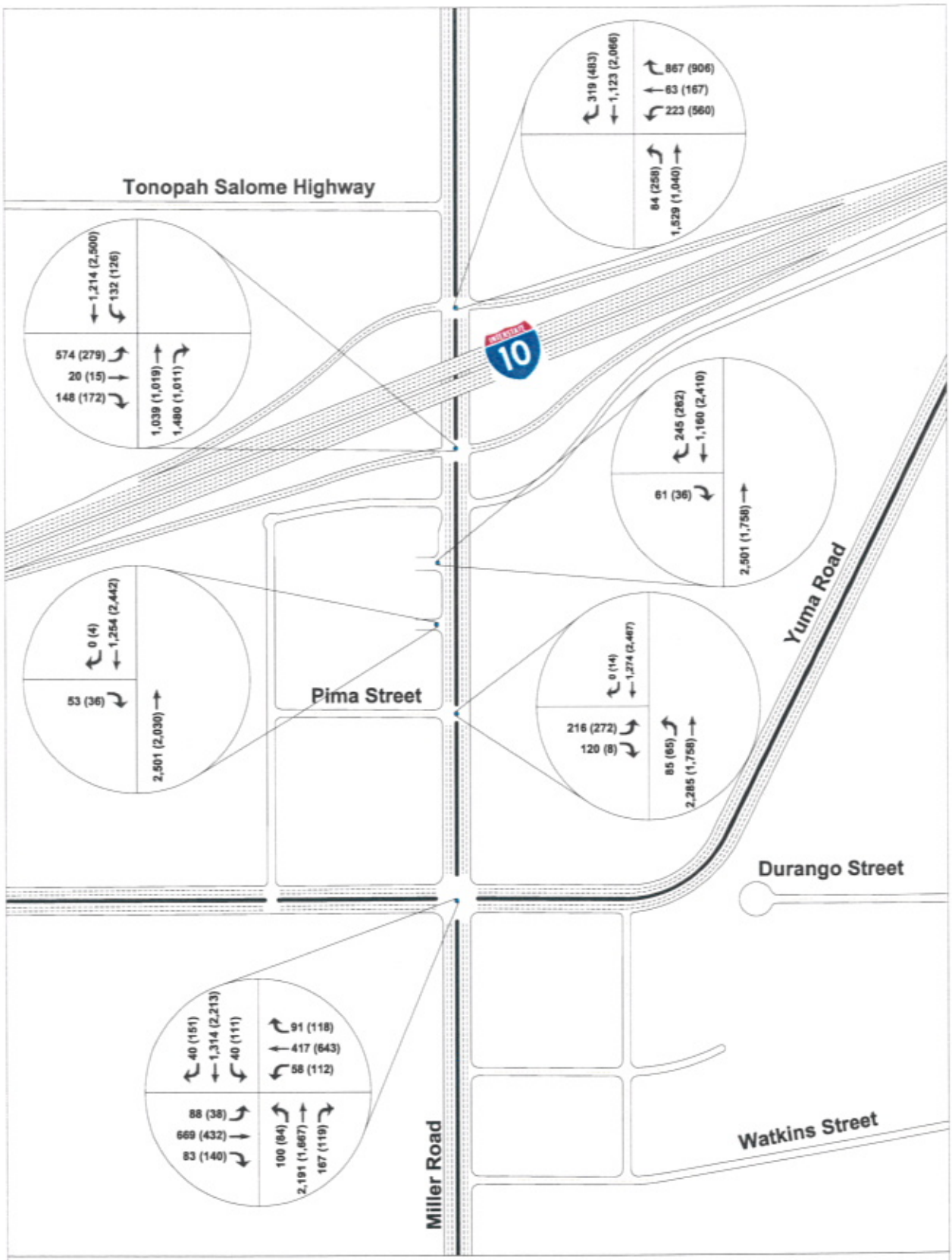


Figure 3-2
2030 Design Hour Volumes With Pima Signal

4.0 Conclusions

The addition of a traffic signal at the intersection of Miller Road and Pima Street is expected to cause a significant increase in control delay on Miller Road in the off-peak direction of travel during the peak hours. The proximity of the signals reduces the effectiveness of coordination for the corridor, increasing delay. The signal at Pima Street would act to meter southbound traffic at the Yuma Road intersection, reducing the impact of the additional signal.

Based on the assumed configurations and timings, each intersection is expected to operate with an LOS of C or better in 2030 with the exception of the intersection of the westbound ramps and Miller Road, where heavy left turning volumes from the ramps cause the LOS to degrade to E.

This report did not consider the additional delay caused by the rerouting of left turning vehicles to Yuma Road.

Appendix

Appendix A: Existing Levels of Service

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	237	1	4	74	9	0	0	4	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	289	1	5	90	11	0	0	5	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	202	197	5	197	198	11	6			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	202	197	5	197	198	11	6			11		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	59	100	100	94			100		
cM capacity (veh/h)	696	640	1046	706	639	1039	1546			1539		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	295	101	6
Volume Left	289	90	0
Volume Right	5	0	1
cSH	709	1546	1700
Volume to Capacity	0.42	0.06	0.00
Queue Length 95th (ft)	51	5	0
Control Delay (s)	13.6	6.7	0.0
Lane LOS	B	A	
Approach Delay (s)	13.6	6.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	7	71	0	0	0	0	81	435	2	235	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	2	9	87	0	0	0	0	99	530	2	287	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	655	921	287	746	655	364	287			629		
vC1, stage 1 conf vol	291	291		364	364							
vC2, stage 2 conf vol	364	629		382	291							
vCu, unblocked vol	655	921	287	746	655	364	287			629		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.2	5.6							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	98	88	100	100	100	100			100		
cM capacity (veh/h)	546	417	727	463	527	657	1215			902		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	98	629	289
Volume Left	2	0	2
Volume Right	87	530	0
cSH	677	1700	902
Volume to Capacity	0.14	0.37	0.00
Queue Length 95th (ft)	13	0	0
Control Delay (s)	11.2	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	11.2	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	2	6	97	5	7	4	477	69	8	379	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	7	2	7	118	6	9	5	582	84	10	462	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1091	1163	468	1124	1127	624	474			666		
vC1, stage 1 conf vol	488	488		634	634							
vC2, stage 2 conf vol	603	676		490	494							
vCu, unblocked vol	1091	1163	468	1124	1127	624	474			666		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.2	5.6							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	98	99	99	68	98	98	100			99		
cM capacity (veh/h)	369	361	573	366	376	466	1033			874		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	17	133	5	666	10	474
Volume Left	7	118	5	0	10	0
Volume Right	7	9	0	84	0	12
cSH	434	372	1033	1700	874	1700
Volume to Capacity	0.04	0.36	0.00	0.39	0.01	0.28
Queue Length 95th (ft)	3	40	0	0	1	0
Control Delay (s)	13.6	20.0	8.5	0.0	9.2	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	13.6	20.0	0.1		0.2	
Approach LOS	B	C				

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	54	31	41	440	385	124
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	66	38	50	537	470	151
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1106	470	621			
vC1, stage 1 conf vol	470					
vC2, stage 2 conf vol	637					
vCu, unblocked vol	1106	470	621			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	84	93	94			
cM capacity (veh/h)	411	572	909			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	104	50	537	470	151
Volume Left	66	50	0	0	0
Volume Right	38	0	0	0	151
cSH	458	909	1700	1700	1700
Volume to Capacity	0.23	0.06	0.32	0.28	0.09
Queue Length 95th (ft)	22	4	0	0	0
Control Delay (s)	15.1	9.2	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.1	0.8		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	44	27	2	475	385	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	54	33	2	579	470	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1054	470	470			
vC1, stage 1 conf vol	470					
vC2, stage 2 conf vol	584					
vCu, unblocked vol	1054	470	470			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	88	94	100			
cM capacity (veh/h)	446	572	1037			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	87	2	579	470
Volume Left	54	2	0	0
Volume Right	33	0	0	0
cSH	487	1037	1700	1700
Volume to Capacity	0.18	0.00	0.34	0.28
Queue Length 95th (ft)	16	0	0	0
Control Delay (s)	14.0	8.5	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.0	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	0	0	476	362	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	13	0	0	580	441	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1023	443	444			
vC1, stage 1 conf vol	443					
vC2, stage 2 conf vol	580					
vCu, unblocked vol	1023	443	444			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	97	100	100			
cM capacity (veh/h)	455	592	1060			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	13	0	580	444
Volume Left	13	0	0	0
Volume Right	0	0	0	2
cSH	455	1700	1700	1700
Volume to Capacity	0.03	0.00	0.34	0.26
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	13.2	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	13.2	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	486	2	7	81	9	0	0	16	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	593	2	9	99	11	0	0	20	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	240	230	21	230	232	11	23			11		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	240	230	21	230	232	11	23			11		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	11	100	99	94			100		
cM capacity (veh/h)	650	609	1025	668	608	1039	1523			1539		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	604	110	23
Volume Left	593	99	0
Volume Right	9	0	4
cSH	671	1523	1700
Volume to Capacity	0.90	0.06	0.01
Queue Length 95th (ft)	286	5	0
Control Delay (s)	39.6	6.8	0.0
Lane LOS	E	A	
Approach Delay (s)	39.6	6.8	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	33.5		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	92	0	0	0	0	87	230	6	495	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	1	0	112	0	0	0	0	106	280	7	604	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	865	1005	604	977	865	246	604			387		
vC1, stage 1 conf vol	618	618		246	246							
vC2, stage 2 conf vol	246	387		730	618							
vCu, unblocked vol	865	1005	604	977	865	246	604			387		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.2	5.6							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	77	100	100	100	100			99		
cM capacity (veh/h)	424	404	479	289	428	766	923			1114		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	113	387	611
Volume Left	1	0	7
Volume Right	112	280	0
cSH	478	1700	1114
Volume to Capacity	0.24	0.23	0.01
Queue Length 95th (ft)	23	0	0
Control Delay (s)	14.9	0.0	0.2
Lane LOS	B		A
Approach Delay (s)	14.9	0.0	0.2
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	2	7	109	1	18	4	313	140	24	480	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	2	9	133	1	22	5	382	171	29	585	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1060	1208	587	1130	1124	467	589			552		
vC1, stage 1 conf vol	646	646		477	477							
vC2, stage 2 conf vol	414	562		654	648							
vCu, unblocked vol	1060	1208	587	1130	1124	467	589			552		
tC, single (s)	7.2	6.6	6.3	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.2	5.6							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	97	99	98	62	100	96	99			97		
cM capacity (veh/h)	365	346	489	352	368	574	934			965		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	156	5	552	29	589
Volume Left	10	133	5	0	29	0
Volume Right	9	22	0	171	0	4
cSH	405	372	934	1700	965	1700
Volume to Capacity	0.05	0.42	0.01	0.32	0.03	0.35
Queue Length 95th (ft)	4	50	0	0	2	0
Control Delay (s)	14.4	21.5	8.9	0.0	8.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.4	21.5	0.1		0.4	
Approach LOS	B	C				

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	42	18	30	418	450	133
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	51	22	37	510	549	162
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1132	549	711			
vC1, stage 1 conf vol	549					
vC2, stage 2 conf vol	583					
vCu, unblocked vol	1132	549	711			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	88	96	96			
cM capacity (veh/h)	414	515	840			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	73	37	510	549	162
Volume Left	51	37	0	0	0
Volume Right	22	0	0	0	162
cSH	440	840	1700	1700	1700
Volume to Capacity	0.17	0.04	0.30	0.32	0.10
Queue Length 95th (ft)	15	3	0	0	0
Control Delay (s)	14.8	9.5	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.8	0.6		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	76	20	1	371	467	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	93	24	1	452	570	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1026	571	572			
vC1, stage 1 conf vol	571					
vC2, stage 2 conf vol	455					
vCu, unblocked vol	1026	571	572			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	80	95	100			
cM capacity (veh/h)	455	500	948			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	117	1	452	572
Volume Left	93	1	0	0
Volume Right	24	0	0	2
cSH	464	948	1700	1700
Volume to Capacity	0.25	0.00	0.27	0.34
Queue Length 95th (ft)	25	0	0	0
Control Delay (s)	15.4	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.4	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	4	2	362	460	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	24	5	2	441	561	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1012	565	570			
vC1, stage 1 conf vol	565					
vC2, stage 2 conf vol	446					
vCu, unblocked vol	1012	565	570			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4	2.3			
p0 queue free %	95	99	100			
cM capacity (veh/h)	459	504	950			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	29	2	441	570
Volume Left	24	2	0	0
Volume Right	5	0	0	9
cSH	466	950	1700	1700
Volume to Capacity	0.06	0.00	0.26	0.34
Queue Length 95th (ft)	5	0	0	0
Control Delay (s)	13.2	8.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.2	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix B: Future Year LOS (Without Pima Signal)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	223	63	867	84	1529	0	0	1123	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor				0.97	0.95	0.95	0.97	0.91			0.91	1.00
Frt				1.00	0.87	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3099	1390	1358	3099	4590			4590	1429
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3099	1390	1358	3099	4590			4590	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	248	70	963	93	1699	0	0	1248	354
RTOR Reduction (vph)	0	0	0	0	3	3	0	0	0	0	0	154
Lane Group Flow (vph)	0	0	0	248	520	507	93	1699	0	0	1248	200
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				51.2	51.2	51.2	6.6	58.8			47.2	47.2
Effective Green, g (s)				51.2	51.2	51.2	6.6	58.8			47.2	47.2
Actuated g/C Ratio				0.43	0.43	0.43	0.06	0.49			0.39	0.39
Clearance Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				1322	593	579	170	2249			1805	562
v/s Ratio Prot				0.08	c0.37		0.03	c0.37			0.27	
v/s Ratio Perm						0.37						0.14
v/c Ratio				0.19	0.88	0.88	0.55	0.76			0.69	0.36
Uniform Delay, d1				21.4	31.5	31.5	55.2	24.8			30.3	25.7
Progression Factor				1.00	1.00	1.00	1.01	0.65			1.00	1.00
Incremental Delay, d2				0.1	13.7	13.9	1.4	1.0			2.2	1.8
Delay (s)				21.5	45.3	45.4	57.3	17.0			32.5	27.4
Level of Service				C	D	D	E	B			C	C
Approach Delay (s)		0.0			40.7			19.1			31.4	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	574	20	148	0	0	0	0	1039	1480	132	1214	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	1.00						0.86	0.86	0.97	0.91	
Frt	1.00	0.87						0.94	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	2789	1313						3661	1106	2789	4131	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	2789	1313						3661	1106	2789	4131	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	638	22	164	0	0	0	0	1154	1644	147	1349	0
RTOR Reduction (vph)	0	53	0	0	0	0	0	106	350	0	0	0
Lane Group Flow (vph)	638	133	0	0	0	0	0	1870	472	147	1349	0
Turn Type	Prot								Prot	Prot		
Protected Phases	7	4						2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	29.9	29.9						66.8	66.8	8.3	80.1	
Effective Green, g (s)	29.9	29.9						66.8	66.8	8.3	80.1	
Actuated g/C Ratio	0.25	0.25						0.56	0.56	0.07	0.67	
Clearance Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	695	327						2038	616	193	2757	
v/s Ratio Prot	c0.23	0.10						c0.51	0.43	c0.05	0.33	
v/s Ratio Perm												
v/c Ratio	0.92	0.41						1.05dr	0.77	0.76	0.49	
Uniform Delay, d1	43.9	37.6						24.1	20.6	54.9	9.9	
Progression Factor	1.00	1.00						0.68	7.18	0.62	2.45	
Incremental Delay, d2	17.0	0.8						4.5	4.7	13.2	0.5	
Delay (s)	60.8	38.5						21.0	152.3	47.4	24.7	
Level of Service	E	D						C	F	D	C	
Approach Delay (s)		55.8			0.0			59.6			26.9	
Approach LOS		E			A			E			C	

Intersection Summary			
HCM Average Control Delay	49.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	304	669	83	58	417	91	185	2106	167	40	1314	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	743	92	64	463	101	206	2340	186	44	1460	44
RTOR Reduction (vph)	0	0	65	0	0	60	0	0	44	0	0	16
Lane Group Flow (vph)	338	743	27	64	463	41	206	2340	142	44	1460	28
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.5	27.2	27.2	6.6	17.3	17.3	11.9	62.6	62.6	3.6	54.3	54.3
Effective Green, g (s)	16.5	27.2	27.2	6.6	17.3	17.3	11.9	62.6	62.6	3.6	54.3	54.3
Actuated g/C Ratio	0.14	0.23	0.23	0.06	0.14	0.14	0.10	0.52	0.52	0.03	0.45	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	446	1089	339	178	692	216	321	2506	780	97	2173	676
v/s Ratio Prot	c0.10	c0.15		0.02	0.10		c0.06	c0.49		0.01	0.30	
v/s Ratio Perm			0.02			0.03			0.09			0.02
v/c Ratio	0.76	0.68	0.08	0.36	0.67	0.19	0.64	0.93	0.18	0.45	0.67	0.04
Uniform Delay, d1	49.8	42.4	36.5	54.7	48.6	45.2	52.0	26.8	15.2	57.2	25.8	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.49	0.35
Incremental Delay, d2	7.2	1.8	0.1	1.2	2.5	0.4	4.3	8.0	0.5	3.1	1.6	0.1
Delay (s)	57.1	44.2	36.6	55.9	51.1	45.6	56.3	34.8	15.7	67.1	14.2	6.5
Level of Service	E	D	D	E	D	D	E	C	B	E	B	A
Approach Delay (s)		47.3			50.7			35.1			15.4	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	43	0	0	63	0	2456	45	0	1362	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	48	0	0	70	0	2729	50	0	1513	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											206	
pX, platoon unblocked	0.85	0.85	0.85	0.85	0.85		0.85					
vC, conflicting volume	2493	4292	504	3281	4242	910	1513			2779		
vC1, stage 1 conf vol	1513	1513		2729	2729							
vC2, stage 2 conf vol	980	2779		552	1513							
vCu, unblocked vol	2133	4255	0	3063	4196	910	978			2779		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.4			4.4		
tC, 2 stage (s)	6.8	5.8		6.8	5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	95	100	100	73	100			100		
cM capacity (veh/h)	96	28	890	16	29	257	541			115		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	48	70	910	910	910	50	504	504	504	0
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	48	70	0	0	0	50	0	0	0	0
cSH	890	257	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.27	0.54	0.54	0.54	0.03	0.30	0.30	0.30	0.00
Queue Length 95th (ft)	4	27	0	0	0	0	0	0	0	0
Control Delay (s)	9.3	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	C								
Approach Delay (s)	9.3	24.2	0.0				0.0			
Approach LOS	A	C								

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	61	0	2501	1160	245
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	68	0	2779	1289	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				1270	462	
pX, platoon unblocked	0.59	0.88	0.88			
vC, conflicting volume	2215	430	1561			
vC1, stage 1 conf vol	1289					
vC2, stage 2 conf vol	926					
vCu, unblocked vol	0	0	1169			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	93	100			
cM capacity (veh/h)	585	926	472			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	68	926	926	926	430	430	430	272
Volume Left	0	0	0	0	0	0	0	0
Volume Right	68	0	0	0	0	0	0	272
cSH	926	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.54	0.54	0.54	0.25	0.25	0.25	0.16
Queue Length 95th (ft)	6	0	0	0	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.2	0.0			0.0			
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	53	0	2501	1221	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	59	0	2779	1357	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				1040	692	
pX, platoon unblocked	0.58	0.90	0.90			
vC, conflicting volume	2283	452	1357			
vC1, stage 1 conf vol	1357					
vC2, stage 2 conf vol	926					
vCu, unblocked vol	0	6	1010			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	94	100			
cM capacity (veh/h)	575	937	558			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	59	926	926	926	452	452	452	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	59	0	0	0	0	0	0	0
cSH	937	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.54	0.54	0.54	0.27	0.27	0.27	0.00
Queue Length 95th (ft)	5	0	0	0	0	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.1	0.0			0.0			
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	120	0	2501	1274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	133	0	2779	1416	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				720	1012	
pX, platoon unblocked	0.57	0.93	0.93			
vC, conflicting volume	2342	472	1416			
vC1, stage 1 conf vol	1416					
vC2, stage 2 conf vol	926					
vCu, unblocked vol	0	157	1174			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	83	100			
cM capacity (veh/h)	566	767	493			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	133	926	926	926	472	472	472	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	133	0	0	0	0	0	0	0
cSH	767	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.17	0.54	0.54	0.54	0.28	0.28	0.28	0.00
Queue Length 95th (ft)	16	0	0	0	0	0	0	0
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	10.7	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

1: Westbound I-10 Ramps & Miller Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.6	0.1	1.8	0.5	2.4	2.6	0.5	8.6
Delay / Veh (s)	39.5	31.1	29.8	83.2	24.9	32.0	20.1	29.7
Vehicles Entered	56	17	222	22	352	294	84	1047

2: Eastbound I-10 Ramps & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	2.5	0.1	0.1	1.0	0.6	0.6	2.0	6.8
Delay / Veh (s)	61.5	37.7	15.0	15.4	6.8	60.5	23.5	22.8
Vehicles Entered	137	5	34	235	325	32	318	1086

3: Frontage Road & Miller Road Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	All
Total Delay (hr)	0.0	1.5	1.2	0.0	0.2	2.9
Delay / Veh (s)	8.7	657.0	7.7	1.4	2.2	11.3
Vehicles Entered	9	13	560	9	338	929

4: Love's Travel Stop Entrance & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.0	1.3	0.1	0.0	1.4
Delay / Veh (s)	3.7	8.0	1.1	1.7	5.4
Vehicles Entered	15	572	281	61	929

5: Love's Travel Stop Exit & Miller Road Performance by movement

Movement	EBR	NBT	SBT	All
Total Delay (hr)	0.0	2.3	0.0	2.4
Delay / Veh (s)	7.1	14.6	0.6	9.8
Vehicles Entered	14	577	292	883

6: Pima Street & Miller Road Performance by movement

Movement	EBR	NBT	SBT	All
Total Delay (hr)	0.1	4.6	0.1	4.7
Delay / Veh (s)	10.0	27.2	0.6	18.0
Vehicles Entered	32	609	304	945

10: Yuma Road & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	1.6	2.2	0.2	0.2	1.5	0.3	1.0	9.1	0.7	0.1	1.7	0.0
Delay / Veh (s)	76.4	44.1	25.4	57.7	50.0	44.5	85.6	65.0	67.3	55.5	18.2	6.6
Vehicles Entered	78	170	23	13	101	22	41	524	41	8	340	10

10: Yuma Road & Miller Road Performance by movement

Movement	All
Total Delay (hr)	18.6
Delay / Veh (s)	49.2
Vehicles Entered	1371

Total Zone Performance

Total Delay (hr)	45.4
Delay / Veh (s)	1795.3
Vehicles Entered	1997

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	R	L	L	T	T	T	T	T	T
Maximum Queue (ft)	84	174	410	394	69	154	393	377	373	294	392	488
Average Queue (ft)	45	92	258	266	28	54	290	280	284	198	241	345
95th Queue (ft)	86	185	417	411	66	139	433	417	404	314	418	529
Link Distance (ft)			1122	1122			455	455	455	1725	1725	1725
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							1					
Storage Bay Dist (ft)	150	150			150	150						
Storage Blk Time (%)		1	23			0	18					24
Queuing Penalty (veh)		4	50			0	15					75

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	175
Average Queue (ft)	108
95th Queue (ft)	216
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	150
Storage Blk Time (%)	0
Queuing Penalty (veh)	1

Intersection: 2: Eastbound I-10 Ramps & Miller Road

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	TR	T	T	TR	R	L	L	T	T	T
Maximum Queue (ft)	174	698	336	145	159	165	152	114	144	342	370	428
Average Queue (ft)	163	531	113	125	132	141	133	63	80	212	242	289
95th Queue (ft)	190	980	364	160	172	170	154	115	143	373	408	454
Link Distance (ft)		992	992	124	124	124	124			455	455	455
Upstream Blk Time (%)		7		17	17	14	7					0
Queuing Penalty (veh)		0		109	109	90	43					0
Storage Bay Dist (ft)	150							150	150			
Storage Blk Time (%)	24	43						0		11		
Queuing Penalty (veh)	68	123						0		14		

Intersection: 3: Frontage Road & Miller Road

Movement	EB	WB	NB	NB	NB
Directions Served	R	R	T	T	T
Maximum Queue (ft)	54	352	158	250	224
Average Queue (ft)	24	202	56	93	186
95th Queue (ft)	57	356	141	244	275
Link Distance (ft)	770	1266	195	195	195
Upstream Blk Time (%)			1	1	7
Queuing Penalty (veh)			5	5	46
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Love's Travel Stop Entrance & Miller Road

Movement	EB	NB	NB	NB
Directions Served	R	T	T	T
Maximum Queue (ft)	57	10	239	221
Average Queue (ft)	32	0	145	190
95th Queue (ft)	61	0	317	237
Link Distance (ft)	252	173	173	173
Upstream Blk Time (%)			6	14
Queuing Penalty (veh)			53	115
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Love's Travel Stop Exit & Miller Road

Movement	EB	NB	NB	NB
Directions Served	R	T	T	T
Maximum Queue (ft)	43	136	350	319
Average Queue (ft)	23	30	267	261
95th Queue (ft)	47	138	452	379
Link Distance (ft)	271	263	263	263
Upstream Blk Time (%)			10	22
Queuing Penalty (veh)			82	187
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pima Street & Miller Road

Movement	EB	NB	NB	NB
Directions Served	R	T	T	T
Maximum Queue (ft)	78	392	588	598
Average Queue (ft)	40	122	336	401
95th Queue (ft)	81	450	706	768
Link Distance (ft)	616	614	614	614
Upstream Blk Time (%)		0	1	2
Queuing Penalty (veh)		1	8	15
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Yuma Road & Miller Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	161	174	380	335	277	126	34	83	151	142	180	123
Average Queue (ft)	114	152	240	182	194	57	12	37	82	93	126	56
95th Queue (ft)	184	199	443	336	285	158	39	65	132	139	179	123
Link Distance (ft)			1266	1266	1266				1903	1903	1903	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)	2	25	2		15	0			1		7	0
Queuing Penalty (veh)	5	56	7		12	0			1		6	0

Intersection: 10: Yuma Road & Miller Road

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	112	174	848	937	990	175	36	49	188	211	230	110
Average Queue (ft)	68	113	554	654	715	91	15	25	94	120	147	24
95th Queue (ft)	129	183	947	1026	1096	218	41	56	189	221	249	100
Link Distance (ft)			1711	1711	1711				614	614	614	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)	1	2	24		47	0			2		10	0
Queuing Penalty (veh)	10	15	44		79	1			1		4	0

Zone Summary

Zone wide Queuing Penalty: 1463

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	560	167	906	258	1040	0	0	2066	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor				0.97	0.95	0.95	0.97	0.91			0.91	0.88
Frt				1.00	0.90	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3099	1431	1358	3099	4590			4590	2515
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3099	1431	1358	3099	4590			4590	2515
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	622	186	1007	287	1156	0	0	2296	537
RTOR Reduction (vph)	0	0	0	0	55	55	0	0	0	0	0	134
Lane Group Flow (vph)	0	0	0	622	554	529	287	1156	0	0	2296	403
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				39.0	39.0	39.0	10.0	71.0			56.0	56.0
Effective Green, g (s)				39.0	39.0	39.0	10.0	71.0			56.0	56.0
Actuated g/C Ratio				0.32	0.32	0.32	0.08	0.59			0.47	0.47
Clearance Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				1007	465	441	258	2716			2142	1174
v/s Ratio Prot				0.20	0.39		c0.09	0.25			c0.50	
v/s Ratio Perm						c0.39						0.16
v/c Ratio				0.62	1.19	1.20	1.11	0.43			1.07	0.34
Uniform Delay, d1				34.2	40.5	40.5	55.0	13.4			32.0	20.3
Progression Factor				1.00	1.00	1.00	0.92	0.77			1.00	1.00
Incremental Delay, d2				1.1	106.0	110.1	83.7	0.4			42.0	0.8
Delay (s)				35.3	146.5	150.6	134.1	10.7			74.0	21.1
Level of Service				D	F	F	F	B			E	C
Approach Delay (s)		0.0			109.7			35.3			64.0	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	70.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	279	15	172	0	0	0	0	1019	1011	126	2500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	1.00						0.86	0.86	0.97	0.91	
Frt	1.00	0.86						0.95	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3099	1450						4122	1229	3099	4590	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3099	1450						4122	1229	3099	4590	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	310	17	191	0	0	0	0	1132	1123	140	2778	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	68	213	0	0	0
Lane Group Flow (vph)	310	204	0	0	0	0	0	1626	348	140	2778	0
Turn Type	Prot								Prot	Prot		
Protected Phases	7	4						2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	20.9	20.9						74.5	74.5	9.6	89.1	
Effective Green, g (s)	20.9	20.9						74.5	74.5	9.6	89.1	
Actuated g/C Ratio	0.17	0.17						0.62	0.62	0.08	0.74	
Clearance Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	540	253						2559	763	248	3408	
v/s Ratio Prot	0.10	c0.14						0.39	0.28	0.05	c0.61	
v/s Ratio Perm												
v/c Ratio	0.57	0.81						0.64	0.46	0.56	0.82	
Uniform Delay, d1	45.5	47.6						14.2	12.0	53.2	10.1	
Progression Factor	1.00	1.00						1.74	8.10	1.34	0.36	
Incremental Delay, d2	1.5	16.8						0.8	1.3	0.8	0.6	
Delay (s)	46.9	64.4						25.6	98.8	72.1	4.3	
Level of Service	D	E						C	F	E	A	
Approach Delay (s)		54.0			0.0			43.8			7.5	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM Average Control Delay	26.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	432	140	112	643	118	149	1602	119	111	2213	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	344	480	156	124	714	131	166	1780	132	123	2459	168
RTOR Reduction (vph)	0	0	113	0	0	77	0	0	42	0	0	39
Lane Group Flow (vph)	344	480	43	124	714	54	166	1780	90	123	2459	129
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.0	22.1	22.1	9.9	19.0	19.0	6.0	59.4	59.4	8.6	62.0	62.0
Effective Green, g (s)	13.0	22.1	22.1	9.9	19.0	19.0	6.0	59.4	59.4	8.6	62.0	62.0
Actuated g/C Ratio	0.11	0.18	0.18	0.08	0.16	0.16	0.05	0.50	0.50	0.07	0.52	0.52
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	885	275	267	760	237	162	2377	740	232	2482	772
v/s Ratio Prot	c0.11	c0.10		0.04	c0.15		c0.05	0.37		0.04	c0.51	
v/s Ratio Perm			0.03			0.04			0.06			0.09
v/c Ratio	0.98	0.54	0.15	0.46	0.94	0.23	1.02	0.75	0.12	0.53	0.99	0.17
Uniform Delay, d1	53.4	44.4	41.1	52.5	49.9	44.1	57.0	24.3	16.3	53.8	28.7	15.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	0.57	0.46
Incremental Delay, d2	42.5	0.7	0.3	1.3	19.2	0.5	77.3	2.2	0.3	1.4	12.2	0.3
Delay (s)	95.9	45.0	41.4	53.8	69.1	44.6	134.3	26.5	16.6	67.0	28.7	7.4
Level of Service	F	D	D	D	E	D	F	C	B	E	C	A
Approach Delay (s)		62.3			63.8			34.5			29.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	50	0	0	50	0	1980	50	0	2622	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	56	0	0	56	0	2200	56	0	2913	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)											206	
pX, platoon unblocked	0.60	0.60	0.60	0.60	0.60		0.60					
vC, conflicting volume	3702	5169	971	3227	5169	733	2969			2256		
vC1, stage 1 conf vol	2913	2913		2200	2200							
vC2, stage 2 conf vol	789	2256		1027	2969							
vCu, unblocked vol	3161	5622	0	2363	5622	733	1931			2256		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.4			4.4		
tC, 2 stage (s)	6.8	5.8		6.8	5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	91	100	100	84	100			100		
cM capacity (veh/h)	33	30	625	35	29	339	156			191		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	56	56	733	733	733	56	971	971	971	56
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	56	56	0	0	0	56	0	0	0	56
cSH	625	339	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.16	0.43	0.43	0.43	0.03	0.57	0.57	0.57	0.03
Queue Length 95th (ft)	7	14	0	0	0	0	0	0	0	0
Control Delay (s)	11.3	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	C								
Approach Delay (s)	11.3	17.7	0.0				0.0			
Approach LOS	B	C								

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	36	0	2030	2410	262
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	0	2256	2678	291
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				1270	462	
pX, platoon unblocked	0.76	0.61	0.61			
vC, conflicting volume	3430	893	2969			
vC1, stage 1 conf vol	2678					
vC2, stage 2 conf vol	752					
vCu, unblocked vol	477	0	1994			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	0	94	100			
cM capacity (veh/h)	-1326	641	150			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	40	752	752	752	893	893	893	291
Volume Left	0	0	0	0	0	0	0	0
Volume Right	40	0	0	0	0	0	0	291
cSH	641	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.44	0.44	0.44	0.53	0.53	0.53	0.17
Queue Length 95th (ft)	5	0	0	0	0	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.0	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 6: Pima Street & Miller Road

Movement	EB	NB	NB	SB
Directions Served	R	T	T	T
Maximum Queue (ft)	21	22	31	35
Average Queue (ft)	6	3	4	9
95th Queue (ft)	24	24	26	73
Link Distance (ft)	616	614	614	263
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 10: Yuma Road & Miller Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	162	174	389	192	164	135	86	152	298	340	352	174
Average Queue (ft)	131	158	253	106	119	73	48	83	231	261	286	107
95th Queue (ft)	187	196	553	197	171	136	97	172	389	417	434	219
Link Distance (ft)			1266	1266	1266				1903	1903	1903	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)	9	37	3		3	0			30		50	0
Queuing Penalty (veh)	13	53	10		4	0			33		58	1

Intersection: 10: Yuma Road & Miller Road

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	136	174	348	408	468	175	73	111	349	421	498	157
Average Queue (ft)	98	124	239	303	331	77	42	65	262	300	351	60
95th Queue (ft)	165	199	360	437	475	202	77	121	410	470	542	172
Link Distance (ft)			1711	1711	1711				614	614	614	
Upstream Blk Time (%)											0	
Queuing Penalty (veh)											2	
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)	5	11	10		27	0			23		31	0
Queuing Penalty (veh)	28	57	15		33	0			25		47	1

Network Summary

Network wide Queuing Penalty: 1342

1: Westbound I-10 Ramps & Miller Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	4.8	1.4	5.4	1.6	0.8	9.8	2.4	26.2
Delay / Veh (s)	139.3	144.2	93.2	88.8	10.8	69.5	76.0	71.4
Vehicles Entered	131	36	218	66	261	511	117	1340

2: Eastbound I-10 Ramps & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	1.3	0.1	0.5	0.9	0.4	0.6	1.2	4.9
Delay / Veh (s)	65.1	55.5	40.3	12.2	5.6	77.3	7.4	14.1
Vehicles Entered	73	4	46	255	256	28	594	1256

3: Frontage Road & Miller Road Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Total Delay (hr)	0.1	0.8	0.9	0.0	0.2	0.0	2.0
Delay / Veh (s)	28.9	339.3	6.4	1.2	1.2	0.3	6.3
Vehicles Entered	12	12	498	15	622	11	1170

4: Love's Travel Stop Entrance & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.0	0.6	0.2	0.0	0.8
Delay / Veh (s)	9.4	4.5	1.0	1.0	2.6
Vehicles Entered	12	507	576	59	1154

5: Love's Travel Stop Exit & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.1	0.5	0.1	0.0	0.7
Delay / Veh (s)	21.7	3.7	0.7	0.2	2.3
Vehicles Entered	11	500	585	1	1097

6: Pima Street & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.0	0.7	0.2	0.0	0.9
Delay / Veh (s)	35.8	4.8	1.3	0.4	3.0
Vehicles Entered	2	519	594	3	1118

10: Yuma Road & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	2.6	1.3	0.3	0.6	4.3	0.4	1.5	3.2	0.2	0.5	3.9	0.3
Delay / Veh (s)	120.5	43.0	27.8	66.7	89.9	53.9	138.5	29.3	19.1	71.4	25.8	22.5
Vehicles Entered	79	107	31	28	166	29	36	410	28	25	557	42

10: Yuma Road & Miller Road Performance by movement

Movement	All
Total Delay (hr)	19.0
Delay / Veh (s)	44.7
Vehicles Entered	1538

Total Network Performance

Total Delay (hr)	56.5
Delay / Veh (s)	95.6
Vehicles Entered	2151

Appendix C: Future Year LOS (With Pima Signal)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	223	63	867	84	1529	0	0	1123	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor				0.97	0.95	0.95	0.97	0.91			0.91	1.00
Frt				1.00	0.87	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3099	1390	1358	3099	4590			4590	1429
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3099	1390	1358	3099	4590			4590	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	248	70	963	93	1699	0	0	1248	354
RTOR Reduction (vph)	0	0	0	0	3	3	0	0	0	0	0	154
Lane Group Flow (vph)	0	0	0	248	520	507	93	1699	0	0	1248	200
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				51.2	51.2	51.2	6.6	58.8			47.2	47.2
Effective Green, g (s)				51.2	51.2	51.2	6.6	58.8			47.2	47.2
Actuated g/C Ratio				0.43	0.43	0.43	0.06	0.49			0.39	0.39
Clearance Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				1322	593	579	170	2249			1805	562
v/s Ratio Prot				0.08	c0.37		0.03	c0.37			0.27	
v/s Ratio Perm						0.37						0.14
v/c Ratio				0.19	0.88	0.88	0.55	0.76			0.69	0.36
Uniform Delay, d1				21.4	31.5	31.5	55.2	24.8			30.3	25.7
Progression Factor				1.00	1.00	1.00	1.00	0.65			1.00	1.00
Incremental Delay, d2				0.1	13.7	13.9	2.0	1.3			2.2	1.8
Delay (s)				21.5	45.3	45.4	57.4	17.4			32.5	27.4
Level of Service				C	D	D	E	B			C	C
Approach Delay (s)		0.0			40.7			19.5			31.4	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	574	20	148	0	0	0	0	1039	1480	132	1214	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	1.00						0.86	0.86	0.97	0.91	
Frt	1.00	0.87						0.94	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3099	1459						4067	1229	3099	4590	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3099	1459						4067	1229	3099	4590	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	638	22	164	0	0	0	0	1154	1644	147	1349	0
RTOR Reduction (vph)	0	56	0	0	0	0	0	104	336	0	0	0
Lane Group Flow (vph)	638	130	0	0	0	0	0	1872	486	147	1349	0
Turn Type	Prot								Prot	Prot		
Protected Phases	7	4						2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	28.1	28.1						68.5	68.5	8.4	81.9	
Effective Green, g (s)	28.1	28.1						68.5	68.5	8.4	81.9	
Actuated g/C Ratio	0.23	0.23						0.57	0.57	0.07	0.68	
Clearance Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	726	342						2322	702	217	3133	
v/s Ratio Prot	c0.21	0.09						c0.46	0.40	c0.05	0.29	
v/s Ratio Perm												
v/c Ratio	0.88	0.38						0.94dr	0.69	0.68	0.43	
Uniform Delay, d1	44.3	38.6						20.5	18.3	54.5	8.6	
Progression Factor	1.00	1.00						0.66	2.98	0.62	2.48	
Incremental Delay, d2	11.7	0.7						2.1	3.7	6.5	0.3	
Delay (s)	56.0	39.3						15.6	58.2	40.3	21.5	
Level of Service	E	D						B	E	D	C	
Approach Delay (s)		52.3			0.0			28.1			23.4	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	216	120	85	2285	1274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1597	1429	1597	4590	4590	
Flt Permitted	0.95	1.00	0.16	1.00	1.00	
Satd. Flow (perm)	1597	1429	270	4590	4590	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	240	133	94	2539	1416	0
RTOR Reduction (vph)	0	56	0	0	0	0
Lane Group Flow (vph)	240	77	94	2539	1416	0
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	22.5	22.5	87.5	87.5	87.5	
Effective Green, g (s)	22.5	22.5	87.5	87.5	87.5	
Actuated g/C Ratio	0.19	0.19	0.73	0.73	0.73	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	299	268	197	3347	3347	
v/s Ratio Prot	c0.15			c0.55	0.31	
v/s Ratio Perm		0.05	0.35			
v/c Ratio	0.80	0.29	0.48	0.76	0.42	
Uniform Delay, d1	46.6	41.9	6.7	9.8	6.4	
Progression Factor	1.00	1.00	0.18	0.29	0.36	
Incremental Delay, d2	14.3	0.6	3.7	0.7	0.4	
Delay (s)	61.0	42.5	4.9	3.6	2.6	
Level of Service	E	D	A	A	A	
Approach Delay (s)	54.4			3.7	2.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	669	83	58	417	91	100	2191	167	40	1314	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	98	743	92	64	463	101	111	2434	186	44	1460	44
RTOR Reduction (vph)	0	0	66	0	0	61	0	0	42	0	0	17
Lane Group Flow (vph)	98	743	26	64	463	40	111	2434	144	44	1460	27
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.9	25.9	25.9	6.6	25.6	25.6	7.8	63.9	63.9	3.6	59.7	59.7
Effective Green, g (s)	6.9	25.9	25.9	6.6	25.6	25.6	7.8	63.9	63.9	3.6	59.7	59.7
Actuated g/C Ratio	0.06	0.22	0.22	0.06	0.21	0.21	0.06	0.53	0.53	0.03	0.50	0.50
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	1037	323	178	1025	319	211	2558	796	97	2389	744
v/s Ratio Prot	c0.03	c0.15		0.02	0.10		c0.03	c0.51		0.01	0.30	
v/s Ratio Perm			0.02			0.03			0.10			0.02
v/c Ratio	0.53	0.72	0.08	0.36	0.45	0.13	0.53	0.95	0.18	0.45	0.61	0.04
Uniform Delay, d1	55.0	43.6	37.6	54.7	41.1	38.2	54.3	26.6	14.5	57.2	21.8	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.15	0.37	0.29
Incremental Delay, d2	2.7	2.4	0.1	1.2	0.3	0.2	2.4	9.6	0.5	3.1	1.1	0.1
Delay (s)	57.6	46.0	37.7	55.9	41.4	38.3	56.7	36.2	15.0	68.7	9.2	4.6
Level of Service	E	D	D	E	D	D	E	D	B	E	A	A
Approach Delay (s)		46.4			42.4			35.6			10.8	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

3: Frontage Road & Miller Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱		↑↑↑	↱		↑↑↑	↱
Volume (veh/h)	0	0	43	0	0	63	0	2456	45	0	1362	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	48	0	0	70	0	2729	50	0	1513	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)								806			206	
pX, platoon unblocked	0.72	0.72	0.87	0.72	0.72	0.65	0.87			0.65		
vC, conflicting volume	2493	4292	504	3281	4242	910	1513			2779		
vC1, stage 1 conf vol	1513	1513		2729	2729							
vC2, stage 2 conf vol	980	2779		552	1513							
vCu, unblocked vol	506	3012	0	1604	2942	0	1077			1869		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.4			4.4		
tC, 2 stage (s)	6.8	5.8		6.8	5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	95	100	100	90	100			100		
cM capacity (veh/h)	141	52	916	44	56	687	508			181		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	48	70	910	910	910	50	504	504	504	0
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	48	70	0	0	0	50	0	0	0	0
cSH	916	687	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.10	0.54	0.54	0.54	0.03	0.30	0.30	0.30	0.00
Queue Length 95th (ft)	4	8	0	0	0	0	0	0	0	0
Control Delay (s)	9.1	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B								
Approach Delay (s)	9.1	10.8	0.0				0.0			
Approach LOS	A	B								

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	61	0	2501	1160	245
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	68	0	2779	1289	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				550	462	
pX, platoon unblocked	0.71	0.90	0.90			
vC, conflicting volume	2215	430	1561			
vC1, stage 1 conf vol	1289					
vC2, stage 2 conf vol	926					
vCu, unblocked vol	263	0	1219			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	93	100			
cM capacity (veh/h)	2915	940	457			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	68	926	926	926	430	430	430	272
Volume Left	0	0	0	0	0	0	0	0
Volume Right	68	0	0	0	0	0	0	272
cSH	940	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.54	0.54	0.54	0.25	0.25	0.25	0.16
Queue Length 95th (ft)	6	0	0	0	0	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.1	0.0			0.0			
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	53	0	2501	1221	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	59	0	2779	1357	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				320	692	
pX, platoon unblocked	0.70	0.91	0.91			
vC, conflicting volume	2283	452	1357			
vC1, stage 1 conf vol	1357					
vC2, stage 2 conf vol	926					
vCu, unblocked vol	463	40	1037			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	93	100			
cM capacity (veh/h)	187	896	548			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	59	926	926	926	452	452	452	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	59	0	0	0	0	0	0	0
cSH	896	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.54	0.54	0.54	0.27	0.27	0.27	0.00
Queue Length 95th (ft)	5	0	0	0	0	0	0	0
Control Delay (s)	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A							
Approach Delay (s)	9.3	0.0			0.0			
Approach LOS	A							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	R	L	L	T	T	T	T	T	T
Maximum Queue (ft)	133	174	608	614	111	148	409	375	367	417	447	538
Average Queue (ft)	53	97	373	374	57	78	291	272	278	229	270	336
95th Queue (ft)	114	189	627	631	129	167	449	415	403	415	480	560
Link Distance (ft)			1122	1122			455	455	455	1725	1725	1725
Upstream Blk Time (%)							2	0	0			
Queuing Penalty (veh)							8	2	0			
Storage Bay Dist (ft)	150	150			150	150						
Storage Blk Time (%)	0	3	33		3	6	17					22
Queuing Penalty (veh)	0	17	74		13	31	15					71

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	175
Average Queue (ft)	81
95th Queue (ft)	193
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	150
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 2: Eastbound I-10 Ramps & Miller Road

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	TR	T	T	TR	R	L	L	T	T	T
Maximum Queue (ft)	174	852	173	205	205	208	154	107	144	353	426	450
Average Queue (ft)	161	561	88	142	147	188	121	66	87	177	225	264
95th Queue (ft)	191	973	175	219	219	228	167	119	154	374	465	500
Link Distance (ft)		992	992	124	124	124	124			455	455	455
Upstream Blk Time (%)		1		14	14	12	2			0	0	1
Queuing Penalty (veh)		0		88	86	74	15			0	1	3
Storage Bay Dist (ft)	150							150	150			
Storage Blk Time (%)	28	50							0	6		
Queuing Penalty (veh)	80	144							0	8		

Intersection: 3: Frontage Road & Miller Road

Movement	EB	WB	NB	NB	NB	SB
Directions Served	R	R	T	T	T	T
Maximum Queue (ft)	41	488	33	234	277	13
Average Queue (ft)	22	314	7	60	194	2
95th Queue (ft)	48	538	35	214	357	20
Link Distance (ft)	770	1266	195	195	195	124
Upstream Blk Time (%)				1	12	
Queuing Penalty (veh)				5	72	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Love's Travel Stop Entrance & Miller Road

Movement	EB	NB	NB	NB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	66	22	248	232	11
Average Queue (ft)	37	3	112	159	2
95th Queue (ft)	71	34	290	268	16
Link Distance (ft)	252	173	173	173	195
Upstream Blk Time (%)			4	12	
Queuing Penalty (veh)			35	96	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Love's Travel Stop Exit & Miller Road

Movement	EB	NB	NB	NB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	54	146	333	294	4
Average Queue (ft)	26	25	210	220	1
95th Queue (ft)	54	126	390	359	6
Link Distance (ft)	271	258	258	258	173
Upstream Blk Time (%)		0	5	10	
Queuing Penalty (veh)		0	41	82	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Pima Street & Miller Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	T
Maximum Queue (ft)	449	163	114	334	488	545	118	114	138
Average Queue (ft)	241	87	59	127	264	319	37	44	78
95th Queue (ft)	428	178	123	361	546	603	104	109	148
Link Distance (ft)	617			607	607	607	258	258	258
Upstream Blk Time (%)					1	1			
Queuing Penalty (veh)					5	10			
Storage Bay Dist (ft)		150	150						
Storage Blk Time (%)	24	1	0	2					1
Queuing Penalty (veh)	28	2	0	2					0

Intersection: 10: Yuma Road & Miller Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	74	96	245	263	289	172	40	56	122	146	162	114
Average Queue (ft)	34	59	141	172	197	70	20	35	81	90	115	57
95th Queue (ft)	77	118	259	279	308	179	47	63	123	153	183	118
Link Distance (ft)			1266	1266	1266				1903	1903	1903	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)		0	8		19	0			0		2	
Queuing Penalty (veh)		0	7		16	0			0		2	

Intersection: 10: Yuma Road & Miller Road

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	97	153	717	802	873	175	39	55	304	326	373	143
Average Queue (ft)	48	72	440	554	609	88	15	30	131	140	164	31
95th Queue (ft)	97	146	775	868	954	217	45	59	296	314	348	127
Link Distance (ft)			1711	1711	1711				607	607	607	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)			18		42	0			8		15	0
Queuing Penalty (veh)			18		70	1			3		6	0

Zone Summary

Zone wide Queuing Penalty: 1234

1: Westbound I-10 Ramps & Miller Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.6	0.2	2.0	0.5	2.3	2.5	0.4	8.6
Delay / Veh (s)	40.2	48.2	32.6	90.2	23.8	32.2	19.0	30.1
Vehicles Entered	54	14	221	22	351	281	79	1022

2: Eastbound I-10 Ramps & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	3.5	0.1	0.2	1.0	0.6	0.5	1.8	7.6
Delay / Veh (s)	85.8	33.4	16.9	15.8	6.7	60.2	21.3	25.6
Vehicles Entered	144	6	37	235	315	31	313	1081

3: Frontage Road & Miller Road Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	All
Total Delay (hr)	0.0	2.2	1.1	0.0	0.2	3.6
Delay / Veh (s)	14.9	788.3	7.5	1.7	2.2	14.3
Vehicles Entered	11	17	546	9	326	909

4: Love's Travel Stop Entrance & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.0	1.1	0.1	0.0	1.3
Delay / Veh (s)	5.0	7.3	1.2	1.7	5.0
Vehicles Entered	14	556	276	58	904

5: Love's Travel Stop Exit & Miller Road Performance by movement

Movement	EBR	NBT	SBT	All
Total Delay (hr)	0.0	1.6	0.1	1.7
Delay / Veh (s)	8.1	10.3	0.9	7.1
Vehicles Entered	14	558	292	864

6: Pima Street & Miller Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	All
Total Delay (hr)	0.9	0.2	0.2	4.1	0.4	5.8
Delay / Veh (s)	62.7	28.3	40.1	27.2	5.2	22.2
Vehicles Entered	50	26	20	543	308	947

10: Yuma Road & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.5	2.1	0.2	0.2	1.2	0.2	0.6	8.2	0.5	0.2	2.0	0.0
Delay / Veh (s)	79.1	42.2	24.8	61.1	39.7	30.3	86.6	56.6	55.4	66.9	22.1	13.7
Vehicles Entered	22	172	23	14	107	23	26	553	36	10	334	8

10: Yuma Road & Miller Road Performance by movement

Movement	All
Total Delay (hr)	16.1
Delay / Veh (s)	44.3
Vehicles Entered	1328

Total Zone Performance

Total Delay (hr)	44.6
Delay / Veh (s)	1689.0
Vehicles Entered	1990

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	560	167	906	258	1040	0	0	2066	483
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor				0.97	0.95	0.95	0.97	0.91			0.91	1.00
Frt				1.00	0.90	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3099	1431	1358	3099	4590			4590	1429
Flt Permitted				0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3099	1431	1358	3099	4590			4590	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	622	186	1007	287	1156	0	0	2296	537
RTOR Reduction (vph)	0	0	0	0	55	55	0	0	0	0	0	134
Lane Group Flow (vph)	0	0	0	622	554	529	287	1156	0	0	2296	403
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				39.0	39.0	39.0	10.0	71.0			56.0	56.0
Effective Green, g (s)				39.0	39.0	39.0	10.0	71.0			56.0	56.0
Actuated g/C Ratio				0.32	0.32	0.32	0.08	0.59			0.47	0.47
Clearance Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				1007	465	441	258	2716			2142	667
v/s Ratio Prot				0.20	0.39		c0.09	0.25			c0.50	
v/s Ratio Perm						c0.39						0.28
v/c Ratio				0.62	1.19	1.20	1.11	0.43			1.07	0.60
Uniform Delay, d1				34.2	40.5	40.5	55.0	13.4			32.0	23.8
Progression Factor				1.00	1.00	1.00	0.90	0.92			1.00	1.00
Incremental Delay, d2				1.1	106.0	110.1	83.7	0.4			42.0	4.0
Delay (s)				35.3	146.5	150.6	133.3	12.7			74.0	27.8
Level of Service				D	F	F	F	B			E	C
Approach Delay (s)		0.0			109.7			36.7			65.2	
Approach LOS		A			F			D			E	

Intersection Summary			
HCM Average Control Delay	71.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	279	15	172	0	0	0	0	1019	1011	126	2500	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	1.00						0.86	0.86	0.97	0.91	
Frt	1.00	0.86						0.95	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3099	1450						4122	1229	3099	4590	
Flt Permitted	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3099	1450						4122	1229	3099	4590	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	310	17	191	0	0	0	0	1132	1123	140	2778	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	68	213	0	0	0
Lane Group Flow (vph)	310	204	0	0	0	0	0	1626	348	140	2778	0
Turn Type	Prot								Prot	Prot		
Protected Phases	7	4						2	2	1	6	
Permitted Phases												
Actuated Green, G (s)	20.9	20.9						74.5	74.5	9.6	89.1	
Effective Green, g (s)	20.9	20.9						74.5	74.5	9.6	89.1	
Actuated g/C Ratio	0.17	0.17						0.62	0.62	0.08	0.74	
Clearance Time (s)	5.0	5.0						5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	540	253						2559	763	248	3408	
v/s Ratio Prot	0.10	c0.14						0.39	0.28	0.05	c0.61	
v/s Ratio Perm												
v/c Ratio	0.57	0.81						0.64	0.46	0.56	0.82	
Uniform Delay, d1	45.5	47.6						14.2	12.0	53.2	10.1	
Progression Factor	1.00	1.00						1.39	5.29	1.33	0.38	
Incremental Delay, d2	1.5	16.8						1.0	1.6	0.8	0.6	
Delay (s)	46.9	64.4						20.8	65.3	71.4	4.4	
Level of Service	D	E						C	E	E	A	
Approach Delay (s)		54.0			0.0			31.8			7.6	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	272	8	65	1758	2467	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1597	1429	1597	4590	4590	1429
Flt Permitted	0.95	1.00	0.05	1.00	1.00	1.00
Satd. Flow (perm)	1597	1429	82	4590	4590	1429
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	302	9	72	1953	2741	16
RTOR Reduction (vph)	0	1	0	0	0	3
Lane Group Flow (vph)	302	8	72	1953	2741	13
Turn Type		Perm	Perm			Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	28.3	28.3	81.7	81.7	81.7	81.7
Effective Green, g (s)	28.3	28.3	81.7	81.7	81.7	81.7
Actuated g/C Ratio	0.24	0.24	0.68	0.68	0.68	0.68
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	377	337	56	3125	3125	973
v/s Ratio Prot	c0.19			0.43	0.60	
v/s Ratio Perm		0.01	c0.87			0.01
v/c Ratio	0.80	0.02	1.29	0.62	0.88	0.01
Uniform Delay, d1	43.2	35.2	19.1	10.6	15.2	6.2
Progression Factor	1.00	1.00	1.23	0.47	0.40	0.23
Incremental Delay, d2	11.6	0.0	195.6	0.7	2.4	0.0
Delay (s)	54.8	35.3	219.1	5.6	8.5	1.4
Level of Service	D	D	F	A	A	A
Approach Delay (s)	54.2			13.2	8.4	
Approach LOS	D			B	A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	432	140	112	643	118	84	1667	119	111	2213	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	4803	1495	3242	4803	1495	3242	4803	1495	3242	4803	1495
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	480	156	124	714	131	93	1852	132	123	2459	168
RTOR Reduction (vph)	0	0	92	0	0	65	0	0	38	0	0	39
Lane Group Flow (vph)	42	480	64	124	714	66	93	1852	94	123	2459	129
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.2	19.0	19.0	9.9	25.7	25.7	6.4	62.3	62.3	8.8	64.7	64.7
Effective Green, g (s)	3.2	19.0	19.0	9.9	25.7	25.7	6.4	62.3	62.3	8.8	64.7	64.7
Actuated g/C Ratio	0.03	0.16	0.16	0.08	0.21	0.21	0.05	0.52	0.52	0.07	0.54	0.54
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	86	760	237	267	1029	320	173	2494	776	238	2590	806
v/s Ratio Prot	0.01	0.10		c0.04	c0.15		0.03	0.39		c0.04	c0.51	
v/s Ratio Perm			0.04			0.04			0.06			0.09
v/c Ratio	0.49	0.63	0.27	0.46	0.69	0.21	0.54	0.74	0.12	0.52	0.95	0.16
Uniform Delay, d1	57.6	47.2	44.4	52.5	43.5	38.8	55.4	22.6	14.8	53.6	26.1	13.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.37	0.36	0.27
Incremental Delay, d2	4.3	1.7	0.6	1.3	2.0	0.3	3.2	2.0	0.3	0.9	4.9	0.2
Delay (s)	61.9	48.9	45.0	53.8	45.6	39.1	58.6	24.6	15.1	74.2	14.4	3.9
Level of Service	E	D	D	D	D	D	E	C	B	E	B	A
Approach Delay (s)		48.8			45.7			25.5			16.4	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	50	0	0	50	0	1980	50	0	2622	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	56	0	0	56	0	2200	56	0	2913	56
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								Raised			Raised	
Median storage veh)								1			1	
Upstream signal (ft)								806			206	
pX, platoon unblocked	0.68	0.68	0.60	0.68	0.68	0.83	0.60			0.83		
vC, conflicting volume	3702	5169	971	3227	5169	733	2969			2256		
vC1, stage 1 conf vol	2913	2913		2200	2200							
vC2, stage 2 conf vol	789	2256		1027	2969							
vCu, unblocked vol	1651	3806	0	952	3806	0	1931			1799		
tC, single (s)	7.8	6.8	7.2	7.8	6.8	7.2	4.4			4.4		
tC, 2 stage (s)	6.8	5.8		6.8	5.8							
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	91	100	100	94	100			100		
cM capacity (veh/h)	38	37	625	54	35	872	156			246		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	56	56	733	733	733	56	971	971	971	56
Volume Left	0	0	0	0	0	0	0	0	0	0
Volume Right	56	56	0	0	0	56	0	0	0	56
cSH	625	872	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.09	0.06	0.43	0.43	0.43	0.03	0.57	0.57	0.57	0.03
Queue Length 95th (ft)	7	5	0	0	0	0	0	0	0	0
Control Delay (s)	11.3	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A								
Approach Delay (s)	11.3	9.4	0.0				0.0			
Approach LOS	B	A								

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	36	0	2030	2410	262
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	0	2256	2678	291
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				550	462	
pX, platoon unblocked	0.70	0.61	0.61			
vC, conflicting volume	3430	893	2969			
vC1, stage 1 conf vol	2678					
vC2, stage 2 conf vol	752					
vCu, unblocked vol	1274	0	1994			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	94	100			
cM capacity (veh/h)	84	641	150			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	40	752	752	752	893	893	893	291
Volume Left	0	0	0	0	0	0	0	0
Volume Right	40	0	0	0	0	0	0	291
cSH	641	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.44	0.44	0.44	0.53	0.53	0.53	0.17
Queue Length 95th (ft)	5	0	0	0	0	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.0	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

5: Love's Travel Stop Exit & Miller Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	39	0	2030	2442	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	43	0	2256	2713	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				Raised	Raised	
Median storage veh)				1	1	
Upstream signal (ft)				320	692	
pX, platoon unblocked	0.70	0.61	0.61			
vC, conflicting volume	3465	904	2718			
vC1, stage 1 conf vol	2713					
vC2, stage 2 conf vol	752					
vCu, unblocked vol	1328	0	1597			
tC, single (s)	7.1	7.2	4.4			
tC, 2 stage (s)	6.1					
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	93	100			
cM capacity (veh/h)	77	644	220			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	43	752	752	752	904	904	904	4
Volume Left	0	0	0	0	0	0	0	0
Volume Right	43	0	0	0	0	0	0	4
cSH	644	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.44	0.44	0.44	0.53	0.53	0.53	0.00
Queue Length 95th (ft)	5	0	0	0	0	0	0	0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	11.0	0.0			0.0			
Approach LOS	B							

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	WB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	TR	R	L	L	T	T	T	T	T	T
Maximum Queue (ft)	162	174	1152	1100	153	166	236	240	225	1096	1290	1356
Average Queue (ft)	135	168	1019	736	120	132	169	146	136	791	995	1097
95th Queue (ft)	199	207	1319	1224	181	202	370	320	239	1170	1438	1481
Link Distance (ft)			1122	1122			455	455	455	1725	1725	1725
Upstream Blk Time (%)			10	0			0	0				
Queuing Penalty (veh)			0	0			2	0				
Storage Bay Dist (ft)	150	150			150	150						
Storage Blk Time (%)	8	39	21		15	19	1					44
Queuing Penalty (veh)	47	239	116		53	65	2					214

Intersection: 1: Westbound I-10 Ramps & Miller Road

Movement	SB
Directions Served	R
Maximum Queue (ft)	175
Average Queue (ft)	140
95th Queue (ft)	219
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	150
Storage Blk Time (%)	1
Queuing Penalty (veh)	4

Intersection: 2: Eastbound I-10 Ramps & Miller Road

Movement	EB	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	TR	T	T	TR	R	L	L	T	T	T
Maximum Queue (ft)	166	230	211	205	209	223	121	110	120	195	228	257
Average Queue (ft)	120	162	136	143	145	178	101	71	77	76	99	134
95th Queue (ft)	180	267	247	234	255	272	149	123	126	218	242	266
Link Distance (ft)		992	992	124	124	124	124			455	455	455
Upstream Blk Time (%)				13	12	14	2			1	1	0
Queuing Penalty (veh)				66	63	72	8			5	6	0
Storage Bay Dist (ft)	150							150	150			
Storage Blk Time (%)	8	9							0	2		
Queuing Penalty (veh)	11	13							0	2		

Intersection: 3: Frontage Road & Miller Road

Movement	EB	WB	NB	NB	NB
Directions Served	R	R	T	T	T
Maximum Queue (ft)	79	178	58	188	247
Average Queue (ft)	34	90	14	56	129
95th Queue (ft)	79	203	61	194	299
Link Distance (ft)	770	1266	195	195	195
Upstream Blk Time (%)				0	4
Queuing Penalty (veh)				2	23
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Love's Travel Stop Entrance & Miller Road

Movement	EB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	54	80	124
Average Queue (ft)	26	11	31
95th Queue (ft)	59	81	114
Link Distance (ft)	252	173	173
Upstream Blk Time (%)		0	1
Queuing Penalty (veh)		0	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Love's Travel Stop Exit & Miller Road

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	T
Maximum Queue (ft)	45	37	142	22	54
Average Queue (ft)	21	7	39	3	9
95th Queue (ft)	49	36	147	34	50
Link Distance (ft)	271	258	258	173	173
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Pima Street & Miller Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	T	R
Maximum Queue (ft)	344	13	147	247	275	258	210	240	248	12
Average Queue (ft)	230	3	97	104	152	167	105	136	174	3
95th Queue (ft)	356	14	163	231	276	295	216	257	291	16
Link Distance (ft)	617			607	607	607	258	258	258	
Upstream Blk Time (%)							0	0	1	
Queuing Penalty (veh)							1	3	5	
Storage Bay Dist (ft)		150	150							150
Storage Blk Time (%)	21		9	3					10	
Queuing Penalty (veh)	2		51	2					1	

Intersection: 10: Yuma Road & Miller Road

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	33	57	125	150	165	165	90	115	202	229	283	174
Average Queue (ft)	12	32	91	111	126	100	48	62	124	144	177	85
95th Queue (ft)	35	67	139	160	182	176	99	119	201	243	300	175
Link Distance (ft)			1266	1266	1266				1903	1903	1903	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)			0		4	0		0	3		10	1
Queuing Penalty (veh)			0		5	0		0	4		12	1

Intersection: 10: Yuma Road & Miller Road

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	72	101	329	395	470	146	78	119	328	376	423	148
Average Queue (ft)	37	52	224	283	330	38	41	63	146	170	190	43
95th Queue (ft)	75	91	362	427	504	130	85	113	290	340	374	144
Link Distance (ft)			1711	1711	1711				607	607	607	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150	150				150	150	150				150
Storage Blk Time (%)			12		28	0		0	5		13	0
Queuing Penalty (veh)			10		33	0		0	6		19	0

Zone Summary

Zone wide Queuing Penalty: 1176

1: Westbound I-10 Ramps & Miller Road Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	6.6	1.8	5.9	1.6	0.9	12.3	3.0	32.2
Delay / Veh (s)	182.5	188.2	103.1	90.3	11.7	85.0	97.3	87.0
Vehicles Entered	136	37	211	64	259	528	116	1351

2: Eastbound I-10 Ramps & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	1.2	0.1	0.4	0.9	0.4	0.7	1.3	5.1
Delay / Veh (s)	62.3	60.7	36.9	13.0	6.2	72.1	7.6	14.5
Vehicles Entered	73	5	44	247	246	34	606	1255

3: Frontage Road & Miller Road Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Total Delay (hr)	0.1	0.7	0.7	0.0	0.2	0.0	1.8
Delay / Veh (s)	30.6	229.0	5.2	1.0	1.3	0.4	5.4
Vehicles Entered	13	13	482	14	635	11	1168

4: Love's Travel Stop Entrance & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.0	0.4	0.2	0.0	0.6
Delay / Veh (s)	9.7	2.9	1.2	1.2	2.0
Vehicles Entered	11	494	584	60	1149

5: Love's Travel Stop Exit & Miller Road Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Total Delay (hr)	0.1	0.5	0.2	0.0	0.7
Delay / Veh (s)	33.6	3.4	1.2	0.0	2.4
Vehicles Entered	8	495	591	1	1095

6: Pima Street & Miller Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Total Delay (hr)	0.9	0.0	0.6	1.7	1.2	0.0	4.4
Delay / Veh (s)	46.4	60.7	139.8	14.1	7.0	2.1	14.0
Vehicles Entered	64	1	18	444	597	4	1128

10: Yuma Road & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.2	1.4	0.3	0.5	1.8	0.2	0.6	3.2	0.1	0.6	2.8	0.1
Delay / Veh (s)	68.8	43.5	30.1	56.9	40.2	26.5	85.9	28.4	18.3	73.9	18.6	13.2
Vehicles Entered	11	112	36	28	155	32	23	419	26	27	561	33

10: Yuma Road & Miller Road Performance by movement

Movement	All
Total Delay (hr)	11.9
Delay / Veh (s)	29.4
Vehicles Entered	1463

Total Zone Performance

Total Delay (hr)	56.7
Delay / Veh (s)	2550.6
Vehicles Entered	2152

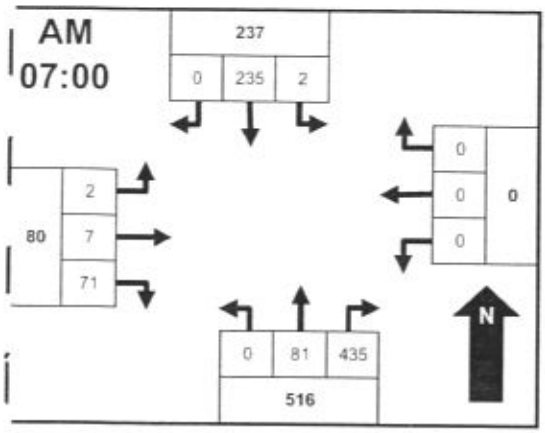
Appendix D: Traffic Data

TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

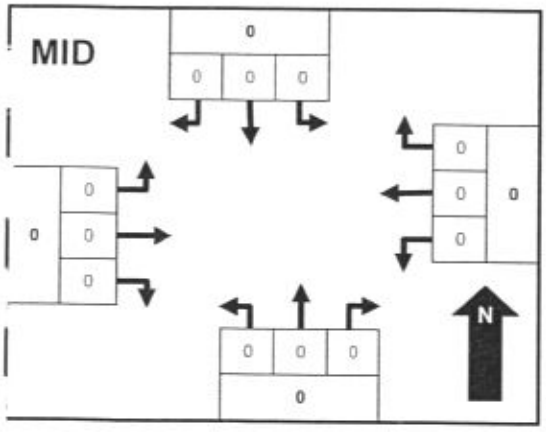
Intersection TMC: 0700431
Count Date: 7/24/2007

AM 07:00



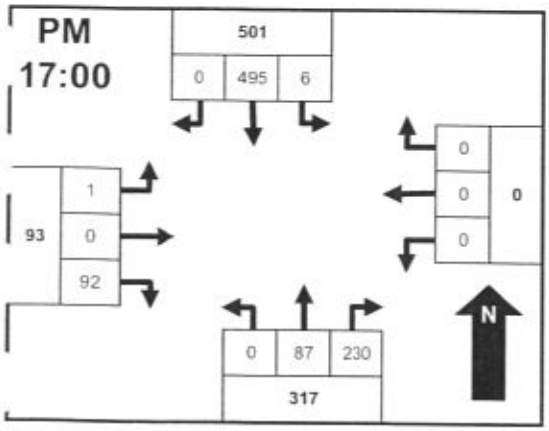
	From North MILLER RD				From East I 10 EB				From South MILLER RD				From West I 10 EB				INTSEC
Time	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	TOTAL
7:00	0	47	0	0	0	0	0	0	0	17	116	0	1	0	22	0	203
7:15	1	78	0	0	0	0	0	0	0	20	133	0	0	2	20	0	254
7:30	0	55	0	0	0	0	0	0	0	17	96	0	1	2	12	0	183
7:45	1	55	0	0	0	0	0	0	0	27	90	0	0	3	17	0	193
8:00	0	44	0	0	0	0	0	0	0	13	78	0	3	2	18	0	158
8:15	1	56	0	0	0	0	0	0	0	17	103	0	1	1	22	0	201
8:30	2	54	0	0	0	0	0	0	0	20	85	0	1	0	24	0	186
8:45	3	53	0	0	0	0	0	0	0	24	91	0	1	0	25	0	197
Total	8	442	0	0	0	0	0	0	0	155	792	0	8	10	160	0	1575
Peak	2	235	0	0	0	0	0	0	0	81	435	0	2	7	71	0	833

MID



Time	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	TOTAL
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak																	0

PM 17:00



Time	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	TOTAL
16:00	0	111	0	0	0	0	0	0	0	33	64	0	1	0	24	0	233
16:15	0	102	0	0	0	0	0	0	0	22	68	0	1	1	23	0	217
16:30	1	110	0	0	0	0	0	0	0	14	53	0	0	0	16	0	194
16:45	2	107	0	0	0	0	0	0	0	18	55	0	0	0	25	0	207
17:00	1	111	0	0	0	0	0	0	0	23	66	0	0	0	19	0	220
17:15	1	127	0	0	0	0	0	0	0	21	51	0	1	0	12	0	213
17:30	1	137	0	0	0	0	0	0	0	23	51	0	0	0	23	0	235
17:45	3	120	0	0	0	0	0	0	0	20	62	0	0	0	38	0	243
Total	9	925	0	0	0	0	0	0	0	174	470	0	3	1	180	0	1762
Peak	6	495	0	0	0	0	0	0	0	87	230	0	1	0	92	0	911

Intersection Statistics

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intv Vol
AM	7:00 AM	833	7:15 AM	254
MID				
PM	5:00 PM	911	5:45 PM	243

Approach Statistics

Per	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol
AM	7:00 AM	237			7:00 AM	516	8:00 AM	98
MID								
PM	5:00 PM	501			4:00 PM	327	5:00 PM	93

Comments

Approach & Departure Volumes (No Peds)

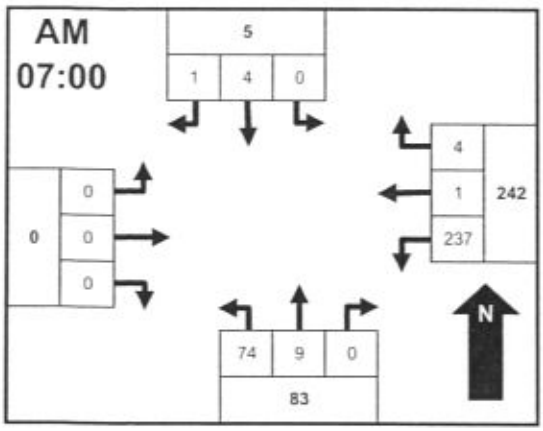
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	450	163	0	810	947	602	178	0
MID	0	0	0	0	0	0	0	0
PM	934	177	0	480	644	1105	184	0

TRAFFIC RESEARCH & ANALYSIS, INC.
Specializing in Traffic Data Collection

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

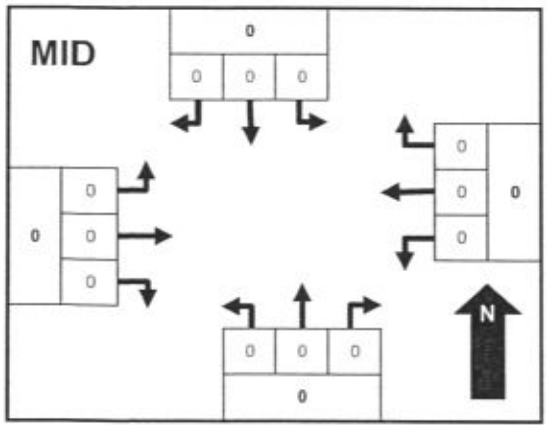
Intersection TMC: 0700432
Count Date: 7/24/2007

AM 07:00



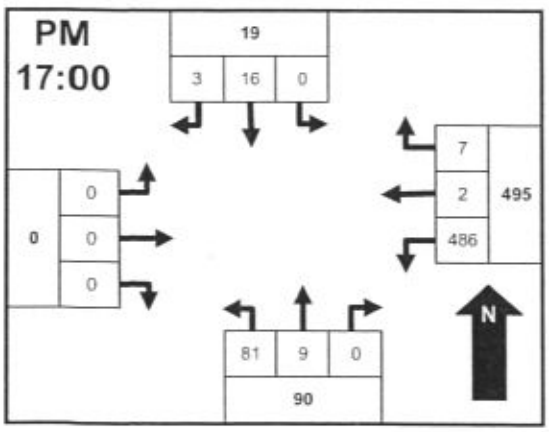
Time	From North MILLER RD LT	Thru	RT	Ped	From East I 10 WB LT	Thru	RT	Ped	From South MILLER RD LT	Thru	RT	Ped	From West I 10 WB LT	Thru	RT	Ped	INTSEC TOTAL
7:00	0	1	0	0	46	0	0	0	16	2	0	0	0	0	0	0	65
7:15	0	1	0	0	78	0	1	0	20	1	0	0	0	0	0	0	101
7:30	0	1	1	0	56	1	1	0	16	1	0	0	0	0	0	0	77
7:45	0	1	0	0	57	0	2	0	22	5	0	0	0	0	0	0	87
8:00	0	2	0	0	42	0	1	0	13	3	0	0	0	0	0	0	61
8:15	0	2	1	0	54	1	2	0	16	2	0	0	0	0	0	0	78
8:30	0	1	1	0	56	0	2	0	18	2	0	0	0	0	0	0	80
8:45	0	4	0	0	52	0	0	0	23	2	0	0	0	0	0	0	81
Total	0	13	3	0	441	2	9	0	144	18	0	0	0	0	0	0	630
Peak	0	4	1	0	237	1	4	0	74	9	0	0	0	0	0	0	330

MID



Time	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	TOTAL
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak																	0

PM 17:00



Time	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	TOTAL
16:00	0	0	0	0	112	0	0	0	30	3	0	0	0	0	0	0	145
16:15	0	1	0	0	102	0	1	0	22	3	0	0	0	0	0	0	129
16:30	0	3	2	0	107	0	0	0	14	1	0	0	0	0	0	0	127
16:45	0	5	0	0	108	0	2	0	9	3	0	0	0	0	0	0	127
17:00	0	4	1	0	108	0	2	0	23	2	0	0	0	0	0	0	140
17:15	0	4	1	0	125	2	2	0	20	1	0	0	0	0	0	0	155
17:30	0	5	0	0	133	0	3	0	23	2	0	0	0	0	0	0	166
17:45	0	3	1	0	120	0	0	0	15	4	0	0	0	0	0	0	143
Total	0	25	5	0	915	2	10	0	156	19	0	0	0	0	0	0	1132
Peak	0	16	3	0	486	2	7	0	81	9	0	0	0	0	0	0	604

Intersection Statistics

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intv Vol
AM	7:00 AM	330	7:15 AM	101
MID				
PM	5:00 PM	604	5:30 PM	166

Approach Statistics

Per	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol	Peak Hour	Pk Hr Vol
AM	8:00 AM	11	7:00 AM	242	7:00 AM	83		
MID								
PM	4:30 PM	20	5:00 PM	495	5:00 PM	90		

Comments

Approach & Departure Volumes (No Peds)

Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	16	27	452	0	162	454	0	149
MID	0	0	0	0	0	0	0	0
PM	30	29	927	0	175	940	0	163

Traffic Research and Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Site ID	File Name	Route	Location	Direction	Count Type	Count Dur	Start Date	Start Time	Avg Vol	AM PkHr	AM PkVol	AM PHF	PM PkHr	PM PkVol	PM PHF	Day Corr	Dir Split	pctSU	pctCB	Avg Spd
1	0703502	MILLER RD	S of I-10 RAMPS	NB	CLS	24	7/24/2007	0:00	7631	6:00	624	0.9750	12:00	427	0.8822	1.0000	49.8%	7.1%	6.4%	23.100
1	0703503	MILLER RD	S of I-10 RAMPS	SB	CLS	24	7/26/2007	0:00	7686	11:45	399	0.9236	16:30	611	0.9147	1.0000	50.2%	6.2%	7.3%	29.400

Traffic Research and Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Site ID	File Name	Route	Location	Direction	Spd 50pct	Spd 85pct	Latitude	Longitude	Comments
1	0703502	MILLER RD	S of I-10 RAMPS	NB	0.0	0.0	33.4325	-112.5910	
1	0703503	MILLER RD	S of I-10 RAMPS	SB	0.0	0.0	33.4325	-112.5910	

Traffic Research and Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Site ID	File Name	Route	Location	Direction	Comments
1	0703502	MILLER RD	S of I-10 RAMPS	NB	
1	0703503*	MILLER RD	S of I-10 RAMPS	SB	TUBE CUT -- PROC AS SINGLE-TUBE VOL UNCORRECTED (AXLE FAC = 0.7992)
* SINGLE-TUBE VOLUME, COUNTS NOT FACTORED (EST AXLE F					
1	0703502	MILLER RD	S of I-10 RAMPS	NB	
1	0703503	MILLER RD	S of I-10 RAMPS	SB	FACTORED VOLUME

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3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Site ID	File Name	Route	Location	Direction	Count Type	Count Dur	Start Date	Start Time	Avg Vol	AM PkHr	AM PkVol	AM PHF	PM PkHr	PM PkVol	PM PHF	Day Corr	Dir Split	pctSU	pctCB	Avg Spd	Latitude	Longitude
1	0703502	MILLER RD	S of I-10 RAMPS	NB	CLS	24	7/24/2007	0:00	7631	6:00	624	0.9750	12:00	427	0.8822	1.0000	44.3%	7.1%	6.4%	23.1	33.4325	-112.5910
1	0703503*	MILLER RD	S of I-10 RAMPS	SB	VOL	38	7/23/2007	10:00	9612	8:45	520	0.9353	17:30	680	0.9196	0.7670	55.7%	5.0%	8.1%	29.3	33.4325	-112.5910
* SINGLE-TUBE VOLUME, COUNTS NOT FACTORED (EST AXLE FACTOR = 0.7992 -- SEE BELOW FOR FACTORED VALUES)																						
1	0703502	MILLER RD	S of I-10 RAMPS	NB	CLS	24	7/24/2007	0:00	7631	6:00	624	0.9750	12:00	427	0.8822	1.0000	49.8%	7.1%	6.4%	23.1	33.4325	-112.5910
1	0703503	MILLER RD	S of I-10 RAMPS	SB	VOL	38	7/23/2007	10:00	9612	8:45	520	0.9353	17:30	680	0.9196	0.7670	50.2%	5.0%	8.1%	29.3	33.4325	-112.5910

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703502
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: NB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
7/24/2007 0:00	21	3	9	3	1	2	2	0	0	1	0	0	0	0	23.8%	4.8%
7/24/2007 0:15	23	3	7	8	0	0	2	0	0	3	0	0	0	0	8.7%	13.0%
7/24/2007 0:30	14	3	6	2	2	0	1	0	0	0	0	0	0	0	21.4%	0.0%
7/24/2007 0:45	14	0	5	7	0	0	1	0	0	1	0	0	0	0	7.1%	7.1%
7/24/2007 1:00	14	2	4	3	1	0	1	0	0	3	0	0	0	0	14.3%	21.4%
7/24/2007 1:15	13	2	6	0	0	1	2	0	1	1	0	0	0	0	23.1%	15.4%
7/24/2007 1:30	18	3	6	5	0	0	3	0	0	1	0	0	0	0	16.7%	5.6%
7/24/2007 1:45	12	0	4	4	0	1	0	0	0	3	0	0	0	0	8.3%	25.0%
7/24/2007 2:00	14	2	9	1	0	0	1	0	0	1	0	0	0	0	7.1%	7.1%
7/24/2007 2:15	15	2	6	3	1	0	0	0	0	3	0	0	0	0	6.7%	20.0%
7/24/2007 2:30	22	0	7	9	1	0	0	0	0	5	0	0	0	0	4.5%	22.7%
7/24/2007 2:45	27	2	13	6	0	1	2	0	0	3	0	0	0	0	11.1%	11.1%
7/24/2007 3:00	31	4	14	4	1	1	4	0	0	3	0	0	0	0	19.4%	9.7%
7/24/2007 3:15	34	5	15	6	1	0	5	0	0	2	0	0	0	0	17.6%	5.9%
7/24/2007 3:30	39	0	15	21	0	0	0	0	0	3	0	0	0	0	0.0%	7.7%
7/24/2007 3:45	61	2	25	28	0	0	3	0	0	3	0	0	0	0	4.9%	4.9%
7/24/2007 4:00	87	5	39	33	0	0	5	0	0	5	0	0	0	0	5.7%	5.7%
7/24/2007 4:15	83	2	40	37	1	0	3	0	0	0	0	0	0	0	4.8%	0.0%
7/24/2007 4:30	90	3	38	40	2	0	2	0	0	5	0	0	0	0	4.4%	5.6%
7/24/2007 4:45	84	4	41	29	1	0	5	0	0	4	0	0	0	0	7.1%	4.8%
7/24/2007 5:00	130	5	68	44	2	1	5	0	0	5	0	0	0	0	6.2%	3.8%
7/24/2007 5:15	127	3	76	38	0	0	5	0	0	5	0	0	0	0	3.9%	3.9%
7/24/2007 5:30	129	5	70	46	1	0	5	0	1	1	0	0	0	0	4.7%	1.6%
7/24/2007 5:45	132	4	71	49	2	1	3	0	0	2	0	0	0	0	4.5%	1.5%
7/24/2007 6:00	150	5	83	51	0	1	5	0	1	4	0	0	0	0	4.0%	3.3%
7/24/2007 6:15	159	4	97	46	4	0	5	0	0	3	0	0	0	0	5.7%	1.9%
7/24/2007 6:30	160	5	103	38	2	1	5	0	0	6	0	0	0	0	5.0%	3.8%
7/24/2007 6:45	155	4	103	39	1	0	5	0	1	2	0	0	0	0	3.9%	1.9%
7/24/2007 7:00	140	5	85	39	4	0	5	0	0	2	0	0	0	0	6.4%	1.4%
7/24/2007 7:15	162	8	100	38	2	2	5	1	1	5	0	0	0	0	6.2%	3.7%
7/24/2007 7:30	115	2	73	26	1	0	5	0	0	7	1	0	0	0	5.2%	7.0%
7/24/2007 7:45	120	5	63	34	2	1	2	0	2	10	0	0	0	1	4.2%	10.8%
7/24/2007 8:00	96	2	50	31	0	2	3	0	0	8	0	0	0	0	5.2%	8.3%
7/24/2007 8:15	125	5	66	40	2	0	6	0	0	6	0	0	0	0	6.4%	4.8%
7/24/2007 8:30	116	9	51	33	4	2	9	0	1	7	0	0	0	0	12.9%	6.9%
7/24/2007 8:45	124	5	60	36	5	3	6	0	2	7	0	0	0	0	11.3%	7.3%
7/24/2007 9:00	116	5	54	35	7	2	5	0	0	7	1	0	0	0	12.1%	6.9%
7/24/2007 9:15	138	11	59	40	7	2	12	0	0	7	0	0	0	0	15.2%	5.1%
7/24/2007 9:30	114	6	54	33	5	2	6	0	0	7	0	0	0	1	11.4%	7.0%
7/24/2007 9:45	104	9	43	28	3	4	12	0	0	5	0	0	0	0	18.3%	4.8%
7/24/2007 10:00	97	6	46	30	2	1	5	0	1	6	0	0	0	0	8.2%	7.2%
7/24/2007 10:15	111	5	53	39	3	2	5	0	0	4	0	0	0	0	9.0%	3.6%
7/24/2007 10:30	102	2	46	39	3	0	3	0	0	9	0	0	0	0	5.9%	8.8%
7/24/2007 10:45	125	5	63	43	0	1	3	0	0	10	0	0	0	0	3.2%	8.0%
7/24/2007 11:00	127	4	59	45	1	1	9	0	0	8	0	0	0	0	8.7%	6.3%
7/24/2007 11:15	103	4	54	33	2	1	2	0	1	6	0	0	0	0	4.9%	6.8%
7/24/2007 11:30	122	2	59	41	5	2	5	0	0	7	1	0	0	0	9.8%	6.6%
7/24/2007 11:45	112	8	44	34	2	1	10	0	0	12	0	0	0	1	11.6%	11.6%

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703502
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: NB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
7/24/2007 12:00	121	7	48	39	3	5	9	0	0	10	0	0	0	0	14.0%	8.3%
7/24/2007 12:15	108	3	49	40	1	2	5	0	1	7	0	0	0	0	7.4%	7.4%
7/24/2007 12:30	82	1	34	30	3	0	3	0	1	10	0	0	0	0	7.3%	13.4%
7/24/2007 12:45	116	7	47	39	3	3	9	0	0	7	0	0	1	0	12.9%	6.9%
7/24/2007 13:00	103	3	53	36	0	1	5	0	0	5	0	0	0	0	5.8%	4.9%
7/24/2007 13:15	97	4	52	31	0	0	4	0	0	6	0	0	0	0	4.1%	6.2%
7/24/2007 13:30	106	5	52	32	3	1	3	0	0	10	0	0	0	0	6.6%	9.4%
7/24/2007 13:45	92	1	44	36	3	0	0	0	0	8	0	0	0	0	3.3%	8.7%
7/24/2007 14:00	101	4	54	25	3	1	5	0	0	9	0	0	0	0	8.9%	8.9%
7/24/2007 14:15	97	5	45	30	1	2	7	0	0	7	0	0	0	0	10.3%	7.2%
7/24/2007 14:30	108	6	60	29	2	2	3	0	0	6	0	0	0	0	6.5%	5.6%
7/24/2007 14:45	99	3	41	42	3	3	0	0	1	5	1	0	0	0	6.1%	7.1%
7/24/2007 15:00	116	4	52	40	2	1	10	1	0	6	0	0	0	0	12.1%	5.2%
7/24/2007 15:15	87	1	48	29	0	0	1	0	0	8	0	0	0	0	1.1%	9.2%
7/24/2007 15:30	86	0	54	28	0	0	0	0	1	3	0	0	0	0	0.0%	4.7%
7/24/2007 15:45	79	4	33	28	1	1	3	0	0	9	0	0	0	0	6.3%	11.4%
7/24/2007 16:00	93	1	54	28	1	1	1	0	0	7	0	0	0	0	3.2%	7.5%
7/24/2007 16:15	98	3	55	31	3	0	2	0	0	4	0	0	0	0	5.1%	4.1%
7/24/2007 16:30	72	2	43	22	2	0	2	0	0	1	0	0	0	0	5.6%	1.4%
7/24/2007 16:45	77	2	42	27	1	0	3	0	1	1	0	0	0	0	5.2%	2.6%
7/24/2007 17:00	86	1	55	21	1	0	1	0	2	5	0	0	0	0	2.3%	8.1%
7/24/2007 17:15	79	5	39	26	2	0	3	0	0	4	0	0	0	0	6.3%	5.1%
7/24/2007 17:30	78	2	36	31	1	0	2	0	0	6	0	0	0	0	3.8%	7.7%
7/24/2007 17:45	86	5	44	31	1	0	3	0	0	2	0	0	0	0	4.7%	2.3%
7/24/2007 18:00	87	3	53	23	2	0	2	0	0	4	0	0	0	0	4.6%	4.6%
7/24/2007 18:15	78	2	44	21	0	0	2	0	0	9	0	0	0	0	2.6%	11.5%
7/24/2007 18:30	61	1	33	17	2	1	1	0	0	6	0	0	0	0	6.6%	9.8%
7/24/2007 18:45	68	5	33	17	6	0	3	0	0	3	0	0	1	0	13.2%	5.9%
7/24/2007 19:00	58	3	35	12	2	0	2	0	0	4	0	0	0	0	6.9%	6.9%
7/24/2007 19:15	70	4	43	15	2	0	3	0	1	2	0	0	0	0	7.1%	4.3%
7/24/2007 19:30	59	1	34	13	0	1	2	0	0	8	0	0	0	0	5.1%	13.6%
7/24/2007 19:45	61	1	36	18	0	0	1	0	0	5	0	0	0	0	1.6%	8.2%
7/24/2007 20:00	58	3	30	17	0	0	3	0	0	5	0	0	0	0	5.2%	8.6%
7/24/2007 20:15	44	2	18	18	1	0	1	0	1	3	0	0	0	0	4.5%	9.1%
7/24/2007 20:30	39	2	26	6	0	0	2	0	0	3	0	0	0	0	5.1%	7.7%
7/24/2007 20:45	62	4	31	17	2	0	2	0	0	6	0	0	0	0	6.5%	9.7%
7/24/2007 21:00	61	4	37	14	3	0	0	0	1	2	0	0	0	0	4.9%	4.9%
7/24/2007 21:15	45	0	30	10	0	0	0	0	0	5	0	0	0	0	0.0%	11.1%
7/24/2007 21:30	39	3	26	5	0	0	2	0	0	3	0	0	0	0	5.1%	7.7%
7/24/2007 21:45	33	1	20	10	1	0	1	0	0	0	0	0	0	0	6.1%	0.0%
7/24/2007 22:00	34	2	17	6	1	0	4	0	0	4	0	0	0	0	14.7%	11.8%
7/24/2007 22:15	27	1	15	5	0	1	1	0	0	4	0	0	0	0	7.4%	14.8%
7/24/2007 22:30	24	3	6	8	0	0	3	0	1	3	0	0	0	0	12.5%	16.7%
7/24/2007 22:45	28	1	19	5	1	0	0	0	0	2	0	0	0	0	3.6%	7.1%
7/24/2007 23:00	27	1	12	7	0	1	2	0	0	4	0	0	0	0	11.1%	14.8%
7/24/2007 23:15	32	4	12	5	1	1	3	0	0	6	0	0	0	0	15.6%	18.8%
7/24/2007 23:30	22	3	11	4	1	0	2	0	0	1	0	0	0	0	13.6%	4.5%
7/24/2007 23:45	20	2	11	3	0	0	2	0	0	2	0	0	0	0	10.0%	10.0%
Day Totals	**7631**	**325**	**3928**	**2344**	**149**	**67**	**326**	**2**	**23**	**458**	**4**	**0**	**2**	**3**	**7.1%**	**6.4%**

AM Peak Hr	**6:00 AM**
AM Peak Vol	**624**
AM PHF	**0.975**
PM Peak Hr	**12:00 PM**
PM Peak Vol	**427**

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703502
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: NB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
PM PHF	0.882															

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703503
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: SB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
PM PHF	0.915															

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703503
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: SB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
7/23/2007 0:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 0:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 0:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 0:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 1:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 1:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 1:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 1:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 2:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 2:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 2:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 2:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 3:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 3:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 3:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 3:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 4:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 4:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 4:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 4:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 5:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 5:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 5:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 5:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 6:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 6:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 6:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 6:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 7:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 7:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 7:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 7:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 8:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 8:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 8:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 8:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 9:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 9:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 9:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 9:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 10:00	82	3	32	31	5	2	3	0	0	5	0	1	0	0	12.2%	7.3%
7/23/2007 10:15	103	5	52	29	4	2	2	0	0	9	0	0	0	0	7.8%	8.7%
7/23/2007 10:30	94	2	37	30	5	2	4	0	0	13	0	0	1	0	11.7%	14.9%
7/23/2007 10:45	88	2	42	28	2	0	2	0	0	12	0	0	0	0	4.5%	13.6%
7/23/2007 11:00	103	3	48	27	2	3	6	0	0	13	1	0	0	0	10.7%	13.6%
7/23/2007 11:15	85	0	41	28	2	0	0	0	1	10	0	0	2	1	2.4%	16.5%
7/23/2007 11:30	89	1	42	27	1	4	3	1	1	8	0	0	1	0	10.1%	11.2%
7/23/2007 11:45	108	6	56	24	1	2	5	1	0	11	1	1	0	0	8.3%	12.0%

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Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
7/23/2007 12:00	85	1	44	26	1	0	2	0	1	9	0	0	0	1	3.5%	12.9%
7/23/2007 12:15	101	5	50	24	1	2	7	0	0	12	0	0	0	0	9.9%	11.9%
7/23/2007 12:30	89	3	45	26	1	1	5	0	0	7	1	0	0	0	7.9%	9.0%
7/23/2007 12:45	107	1	55	30	3	1	3	0	1	13	0	0	0	0	6.5%	13.1%
7/23/2007 13:00	100	6	53	20	3	3	1	0	0	13	0	0	1	0	7.0%	14.0%
7/23/2007 13:15	111	3	59	32	3	0	4	0	0	10	0	0	0	0	6.3%	9.0%
7/23/2007 13:30	101	0	53	37	1	0	2	0	1	7	0	0	0	0	3.0%	7.9%
7/23/2007 13:45	100	1	52	30	2	0	2	0	0	13	0	0	0	0	4.0%	13.0%
7/23/2007 14:00	133	3	69	33	3	2	5	0	0	17	0	0	0	1	7.5%	13.5%
7/23/2007 14:15	154	9	79	42	1	1	6	1	0	14	0	0	0	1	5.8%	9.7%
7/23/2007 14:30	157	2	92	43	2	2	0	0	0	14	0	0	2	0	2.5%	10.2%
7/23/2007 14:45	128	3	69	37	1	0	1	0	2	13	2	0	0	0	1.6%	13.3%
7/23/2007 15:00	93	0	59	25	1	0	2	0	1	4	0	0	1	0	3.2%	6.5%
7/23/2007 15:15	94	1	49	34	0	0	3	0	0	6	0	0	0	1	3.2%	7.4%
7/23/2007 15:30	118	2	71	30	2	0	3	1	0	8	1	0	0	0	5.1%	7.6%
7/23/2007 15:45	118	2	76	32	0	0	2	0	1	5	0	0	0	0	1.7%	5.1%
7/23/2007 16:00	130	2	81	38	0	0	2	1	0	6	0	0	0	0	2.3%	4.6%
7/23/2007 16:15	142	2	86	37	2	5	3	0	0	7	0	0	0	0	7.0%	4.9%
7/23/2007 16:30	118	3	77	33	1	0	0	0	0	4	0	0	0	0	0.8%	3.4%
7/23/2007 16:45	54	4	28	18	1	0	1	1	0	1	0	0	0	0	5.6%	1.9%
7/23/2007 17:00	116	3	80	27	0	0	1	1	0	3	0	1	0	0	1.7%	3.4%
7/23/2007 17:15	127	3	86	27	1	1	2	0	0	7	0	0	0	0	3.1%	5.5%
7/23/2007 17:30	162	2	100	47	0	0	1	0	0	12	0	0	0	0	0.6%	7.4%
7/23/2007 17:45	137	0	103	27	0	0	1	0	0	5	0	1	0	0	0.7%	4.4%
7/23/2007 18:00	146	2	104	30	1	1	2	0	0	6	0	0	0	0	2.7%	4.1%
7/23/2007 18:15	134	5	90	27	0	0	5	0	0	7	0	0	0	0	3.7%	5.2%
7/23/2007 18:30	137	5	87	38	1	0	4	0	0	2	0	0	0	0	3.6%	1.5%
7/23/2007 18:45	109	1	69	30	2	0	3	0	0	4	0	0	0	0	4.6%	3.7%
7/23/2007 19:00	121	5	77	26	5	2	3	0	0	3	0	0	0	0	8.3%	2.5%
7/23/2007 19:15	111	6	71	19	3	0	5	1	0	6	0	0	0	0	8.1%	5.4%
7/23/2007 19:30	99	5	69	18	1	0	4	0	0	2	0	0	0	0	5.1%	2.0%
7/23/2007 19:45	81	4	48	18	0	1	2	0	0	8	0	0	0	0	3.7%	9.9%
7/23/2007 20:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 20:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 20:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 20:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 21:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 21:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 21:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 21:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 22:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 22:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 22:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 22:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 23:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 23:15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 23:30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/23/2007 23:45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Day Totals	**4465**	**116**	**2581**	**1185**	**65**	**37**	**112**	**8**	**9**	**329**	**6**	**4**	**8**	**5**	**5.0%**	**8.1%**

AM Peak Hr	**10:15 AM**
AM Peak Vol	**388**
AM PHF	**0.942**
PM Peak Hr	**5:30 PM**
PM Peak Vol	**579**

Traffic Research & Analysis, Inc.
3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703503
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: SB
Latitude: 33.43250
Longitude: -112.59099

Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB
PM PHF	0.894															

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3844 East Indian School Road
Phoenix, AZ 85018
(602) 840-1500

Client: URS CORP
File Number: 0703503*
Route: MILLER RD (BEFORE TRUCK STOP DRWYS)
Location: S of I-10 RAMPS

Site Ref: 1
Direction: SB
Latitude: 33.4325
Longitude: -112.5910

Count Date	7/23/2007		7/24/2007														Average	
Count Time	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00		109	34	138													34	124
12:15		131	45	126													45	129
12:30		118	26	118													26	118
12:45		141	24	139													24	140
01:00		135	27	121													27	128
01:15		138	44	128													44	133
01:30		117	23	126													23	122
01:45		134	27	124													27	129
02:00		175	39	154													39	165
02:15		197	22	168													22	183
02:30		200	42	149													42	175
02:45		176	43	136													43	156
03:00		105	30	120													30	113
03:15		115	37	103													37	109
03:30		142	30	118													30	130
03:45		139	25	124													25	132
04:00		154	47	152													47	153
04:15		172	45	163													45	168
04:30		129	44	159													44	144
04:45		73	82	176													82	125
05:00		135	75	148													75	142
05:15		146	83	154													83	150
05:30		186	118	184													118	185
05:45		159	92	188													92	174
06:00		170	66	155													66	163
06:15		162	79	157													79	160
06:30		151	72	166													72	159
06:45		126	95	155													95	141
07:00		147	101	114													101	131
07:15		143	141	134													141	139
07:30		122	90	110													90	116
07:45		121	97	115													97	118
08:00		108	89	111													89	110
08:15		102	108	112													108	107
08:30		107	108	90													108	99
08:45		76	139	94													139	85
09:00		102	135	87													135	95
09:15		90	119	72													119	81
09:30		80	127	104													127	92
09:45		84	138	86													138	85
10:00	108	69	119	101													114	85
10:15	128	72	101	73													115	73
10:30	128	69	124	54													126	62
10:45	113	64	122	94													118	79
11:00	142	57	117	84													130	71
11:15	115	57	128	57													122	57
11:30	112	52	134	47													123	50
11:45	173	45	114	40													144	43
Totals	1019	5802	3767	5828	0	0	0	0	0	0	0	0	0	0	0	0	3797	5815
Day Total	6821		9595		0		0		0		0		0		0		9612	
AM Pct	14.9%		39.3%														39.5%	
Peak Hour	11:00	14:00	8:45	17:30													8:45	17:30
Peak Volume	542	748	520	684													520	681
P.H.F	0.7832	0.9350	0.9353	0.9096													0.9353	0.9196

*** SINGLE-TUBE VOLUME, COUNTS NOT FACTORED (EST AXLE FACTOR = 0.7992)**