

# Miller Road and Interstate 10 Short Term Improvement Analysis



April 2016

# **MILLER ROAD AND INTERSTATE 10 SHORT TERM IMPROVEMENT ANALYSIS**

## **Miller Road and Interstate 10 Buckeye, Arizona**

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## INTRODUCTION

CivTech, Inc. has been retained by the Maricopa Association of Governments (MAG), to assist them and the City of Buckeye with a traffic analysis of the service interchange at I-10 and Miller Road. The immediate surrounding area includes several commercial facilities targeting commercial truck traffic. The proximity of these enterprises to the interchange and the lack of supporting grid roadways have resulted in significant queueing problems on the I-10 east/west ramps and the adjacent segment of Miller Road. This report identifies the Miller Road and Interstate 10 traffic interchange short-term improvements that could mitigate the existing queueing problem until mid-term and/or long-term improvements could be made to the interchange.

In 2013 and 2014, AZTEC Engineering completed some analysis of the I-10 and Miller Road traffic interchange for the City of Buckeye. Their initial analysis focused on mid-term and long-term improvements with reconstruction of the interchange to an urban diamond. In addition to the analysis of improvements, AZTEC Engineering completed a cost benefit analysis of the interchange, including a minor widening of the ramps and of Miller Road with signals installed at the ramp termini. Additionally, ADOT Project Management Group offered an approach to reconfigure the access to Love's truck stop to enable more queue storage.

The purpose of this study is to evaluate the existing impacts at the I-10 and Miller Road TI and determine if short term improvements can be made to mitigate the existing condition until funding is available for mid-term and long-term improvement implementation. Since the AZTEC report already identified mid and long term solutions for this location, they were not further evaluated herein. This report was prepared based on criteria set forth by MAG, the Arizona Department of Transportation (ADOT) and the City of Buckeye. The specific objectives of the study will focus on the following:

1. Immediate opportunities to improve queueing in all directions to decrease truck queueing delays from surrounding land uses within the study area.
2. Evaluation of crash data in the study area.
3. Extended queueing at the interchange believed to be a result of heavy truck volumes.
4. Independent signal operations along the Miller Road corridor.
5. Operational improvements without widening existing pavement.
6. Evaluation of short-term improvements 5-years after installation.

There are two (2) proposed short-term conditions analyzed within this report. The first assumes that the one-way stop controlled ramps would be converted to and all-way stop condition. The second condition assumes that traffic signals will be used to control traffic at each ramp terminus with Miller Road.

A 2020 horizon year has been established for the evaluation of short-term improvements. Should a short-term solution provide viable benefits to the roadway network in 2020, a horizon of 2025 will also be evaluated to determine the likely impacts

five-years after installation. It should be noted the additional 2025 study horizon year is a conservative evaluation since the short term improvements could be constructed immediately if an all-way stop is recommended or in the 2017 fiscal year if signalization is recommended.

## EXISTING CONDITIONS

There are several businesses along the Miller Road corridor within the study area that produce and attract heavy truck volumes. The Days Inn, Burger King and Loves Travel Stop are located in the southwest corner of Miller Road and Yuma Road. Both the Burger King and Loves Travel Stop share one (1) access on Miller Road. Yuma Road provides direct access to the Days Inn. The Loves Travel Stop has two (2) full movement access points on Miller Road and two (2) full movement access points on Pima Street. The Quik Trip (QT) gas station is located on the southwest corner of Miller Road and Pima Street and also provides truck stop services and fueling for heavy vehicles. Quik Trip is accessed via one (1) full movement driveway to Miller Road, two (2) full movement driveways along Pima Street, and one (1) full movement driveway along Durango Street. A Chevron gas station is located in the southeast corner of Miller Road and Durango Street. Chevron is access via one (1) full movement driveway on Durango Street which will likely be restricted in the future, (1) right-in, right-out only along Miller Road and two (2) full accesses along Hess Lane.

Miller Road is an existing north/south principal arterial that is currently two-lanes with a continuous two-way left-turn lane approaching I-10 within the study area. Miller Road begins just north of the I-10 as a paved roadway and travels southbound terminating south of Hazen Road in the City of Buckeye, Arizona. The current posted speed limit is 45-mph along Miller Road within the project study area.

The **Miller Road and I-10** traffic interchange is a tight diamond interchange with stop control on the eastbound/westbound off-ramps. The intersection of Miller Road and I-10 westbound ramps consists of an exclusive left-turn lane and one (1) through lane in the northbound approach. A single shared through/right-turn lane is provided in the southbound approach and a shared left/through/right turn lane is provided in the westbound approach. The intersection of Miller Road and I-10 eastbound ramps consists of one (1) through lane and dedicated right-turn lane in the northbound approach. The southbound approach consists of an exclusive left-turn lane and one (1) through lane. The eastbound approach consists of a shared left/through/right-turn lane.

The northbound right-turn lane approaching the I-10 eastbound ramps is a continuous right-turn lane that provides an added through lane along Miller Road between Pima Street and the I-10 eastbound ramp intersection.

The intersection of **Miller Road and Yuma Road** is an unsignalized "T" intersection with stop control in the eastbound approach. The northbound approach consists of an exclusive left-turn lane and two (2) through lanes. The southbound approach consists of a shared through/right-turn lane. The eastbound approach consists of a single shared left/through/right-turn lane.

The intersection of **Miller Road and Pima Street** is a signalized “T” intersection with protected/permitted phasing in the northbound approach and protected eastbound phasing. The northbound approach consists of an exclusive left-turn lane and two (2) through lanes. The southbound approach consists of a dedicated right-turn lane and one (1) through lane. The eastbound approach consists of dual left-turn lanes and a dedicated right-turn lane.

The intersection of **Miller Road and Durango Street** is signalized with exclusive/permitted phasing in all approaches. An exclusive left-turn lane, one (1) though lane and a dedicated right-turn lane is provided on all approaches. The eastbound approach provides an extra 20 feet of pavement for future lanes.

### **EXISTING TRAFFIC VOLUMES**

Existing vehicle classification and 24-hour traffic count data was collected by Traffic Research & Analysis Inc. on September 1, 2015 at the following locations:

- Northbound Miller Road between the I-10 WB Off-ramp and Yuma Road
- Southbound Miller Road between the I-10 WB Off-ramp and Yuma Road

The existing traffic data was reviewed for the four highest peak hours of the day. Since heavy vehicles are presumed to aggravate the existing Miller Road corridor and TI operations, data was reviewed for both typical vehicles volumes as well as heavy vehicle volumes. A review of the data indicated that the hours of 6:45AM-7:45AM and 4:30PM-5:30PM represent the highest number of total vehicles during the data collection period. The hours of 9:15AM-10:15AM and 1:30PM-2:30PM represent the highest total truck percentages during the data collection period. Therefore, turning movement data for these four hours were extracted for further analysis and consideration.

Peak hour turning movement volumes and vehicle classification were counted during the four study hours identified above at the following locations.

- Miller Road and I-10 Westbound Ramps
- Miller Road and I-10 Eastbound Ramps
- Miller Road and Yuma Road
- Miller Road and Loves Northern Driveway
- Miller Road and Loves Southern Driveway
- Miller Road an Pima Street
- Miller Road and QT Driveway
- Miller Road and Durango Street

### **EXISTING QUEUE**

Field reconnaissance was performed during the four highest traffic hours as identified above. Queueing counts at the two off-ramps and at the Miller Road and Yuma Road intersection were performed in five-minute intervals for each analysis period.

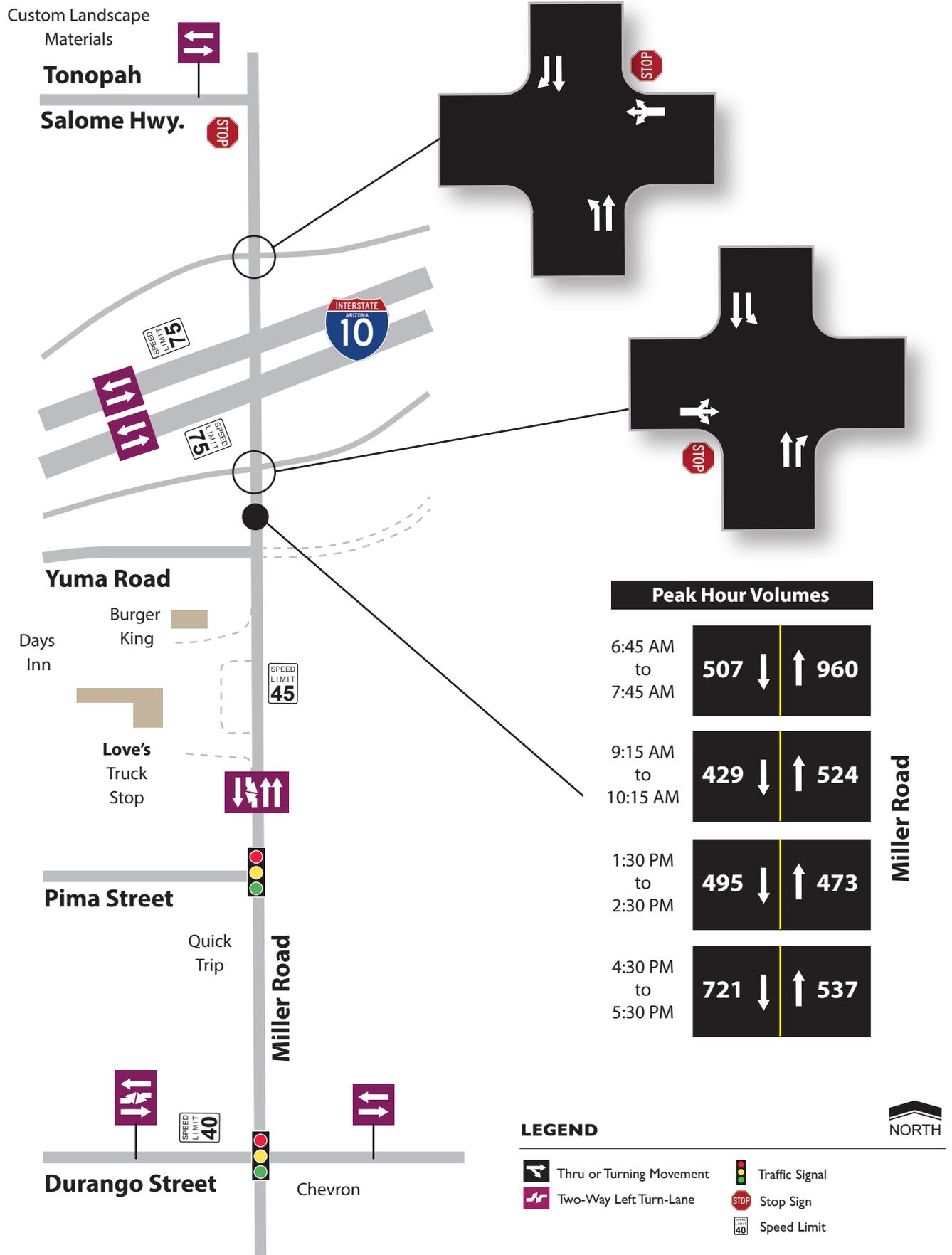
**Figure 1** illustrates the study area, existing conditions and the four (4) highest peak hours of the day. **Figure 2** shows the exiting turning movement volumes during the four highest peak hours. **Figure 3** illustrates the maximum existing queueing during the four highest peak hours of the day.

Existing traffic counts are included in **Appendix A** while existing queue data has been included in **Appendix B**.

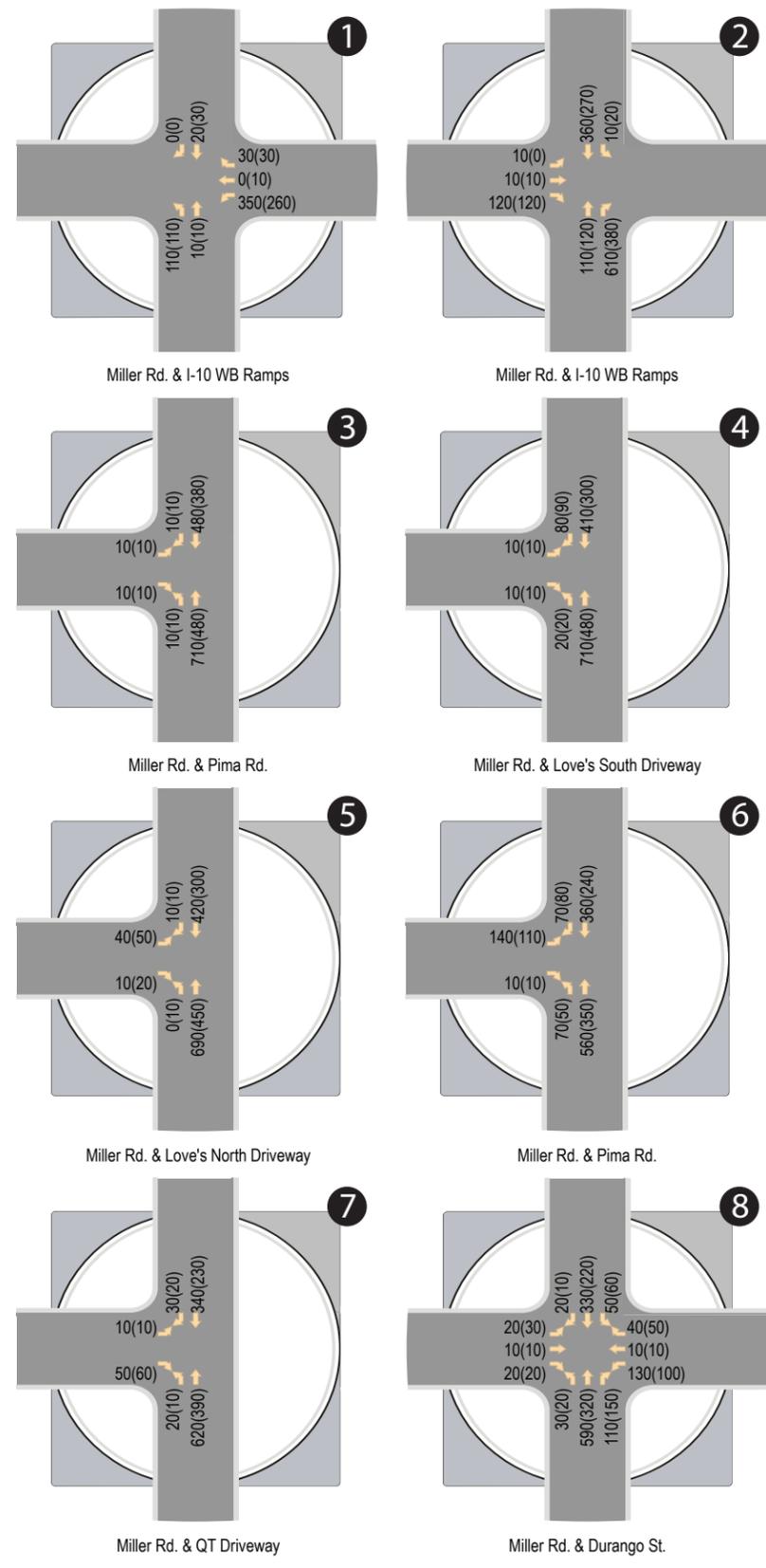
## **EXISTING CRASH EXPERIENCE**

CivTech reviewed the crash history for the I-10/Miller Road traffic interchange (TI), Exit 114 and the crashes reported on Miller Road at/approaching I-10 from 2010 through 2014. The interchange is constructed in a tight diamond configuration with an on- and off-ramp in each direction for a total of four ramps. This TI is considered to be in a rural area and it is unsignalized, controlled only by stop signs at the end of each off-ramp. Each ramp is signed with an off-mainline reference marker.

Reference marker 114A is the off ramp in the direction of increasing mileposts which is eastbound. Ramp 114C is the off-ramp in the direction of decreasing mileposts in the westbound direction. Ramp 114G is the on-ramp in the eastbound direction and Ramp J is the on-ramp in the westbound direction.



**Figure 1: Existing Conditions**

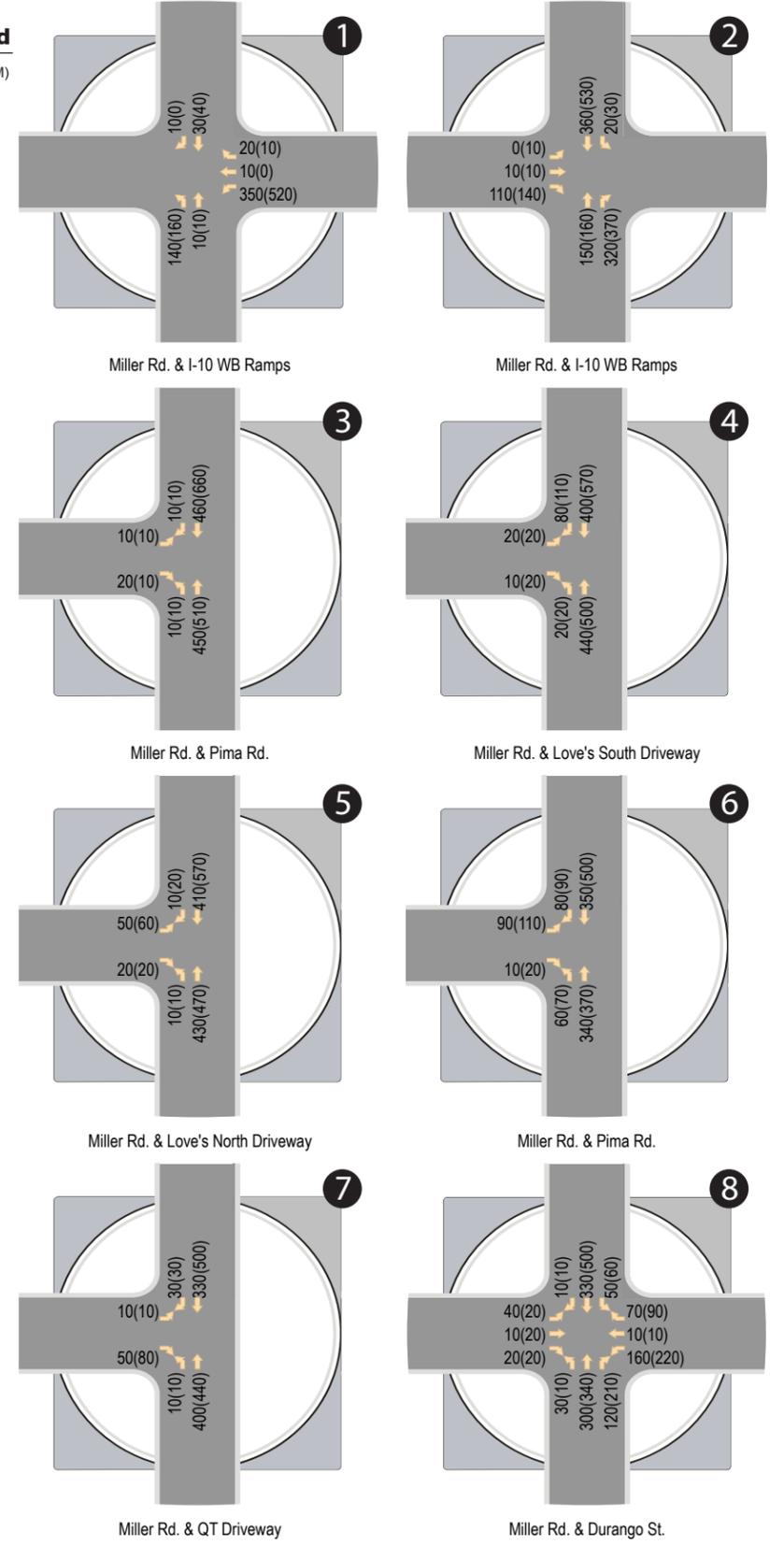
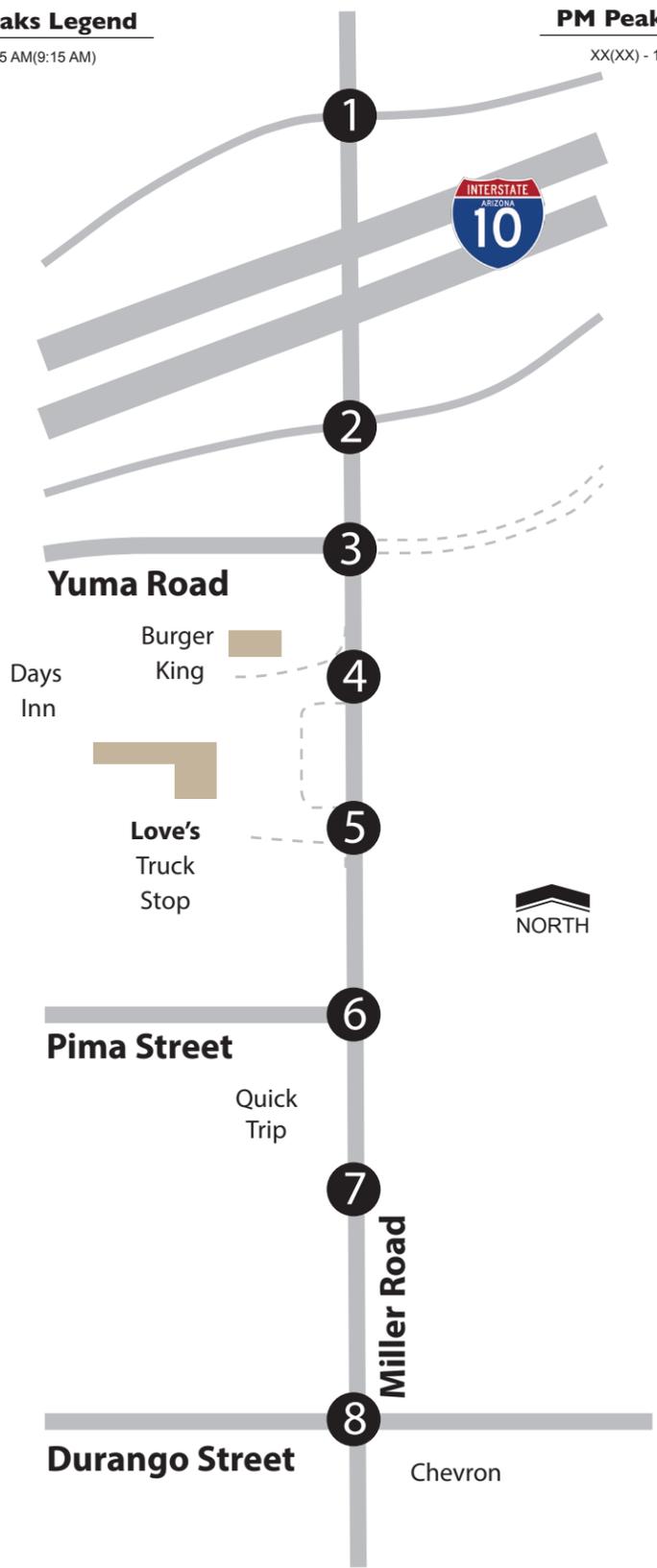


**AM Peaks Legend**

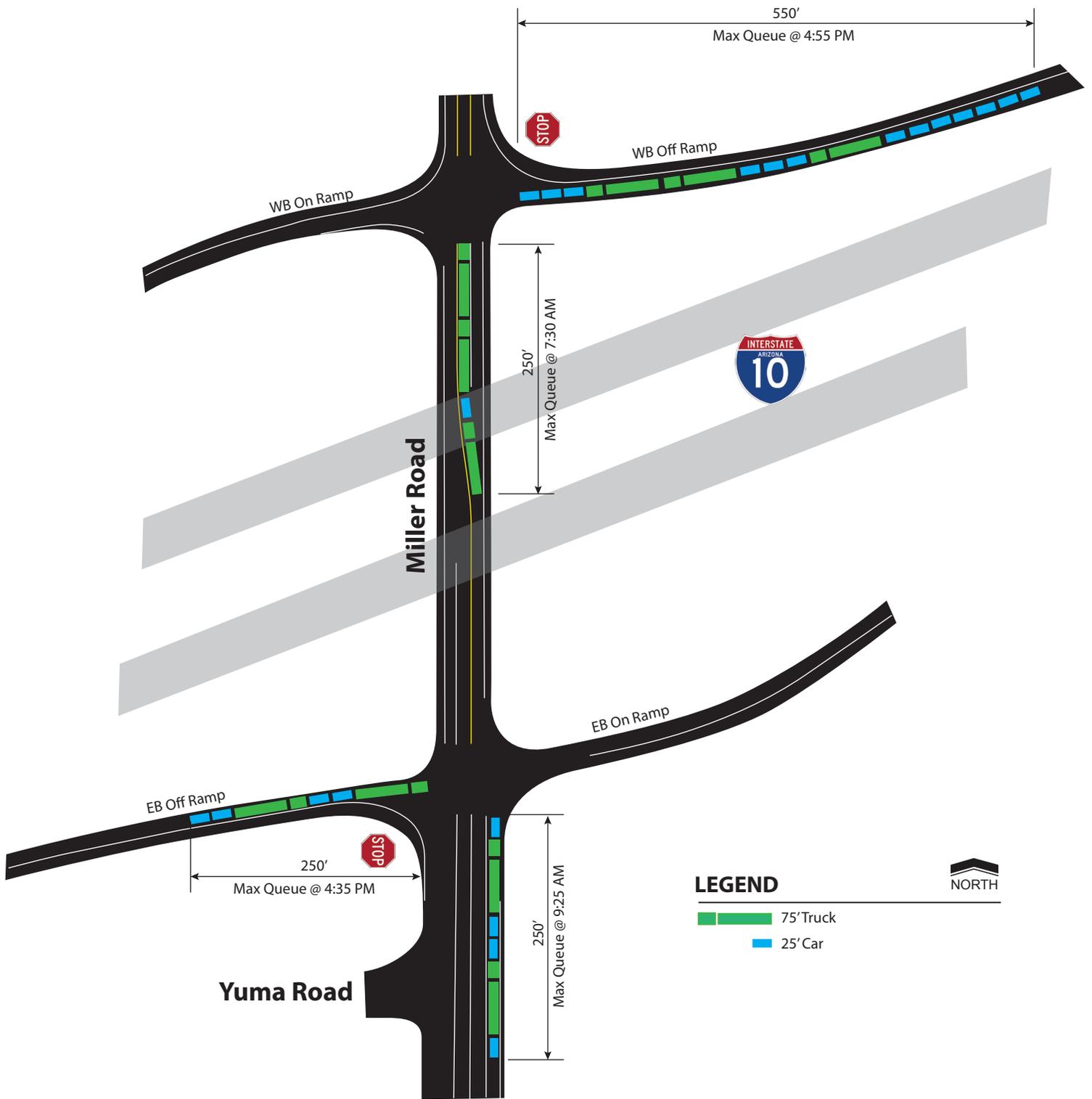
XX(XX) - 6:45 AM(9:15 AM)

**PM Peaks Legend**

XX(XX) - 1:30 PM(4:30 PM)



**Figure 2: Existing Peak Hour Traffic Volumes**



**Figure 3: Maximum Existing Queue**

### **RAMP-RELATED CRASHES**

This section discusses the 17 ramp-related crashes recorded for the five calendar years, 2010 through 2014, that are referenced to these four markers. Since the subject of this review is the Miller Road TI and not the I-10 mainline, crashes that may have occurred on freeway are not considered below. A listing of all 17 crashes is included in **Appendix C** and are shown on the left side of **Figure 4**, which is a collision diagram.

None of the crashes resulted in fatal injuries. Of the 17 crashes, four separate crashes resulted in a total of four bodily injuries. Fifteen of the 17 crashes involved two vehicles each: 11 of them rear-end collisions and 4 same-direction sideswipes. These 15 resulted in 3 of the 4 injuries. The remaining 2 crashes involved 1-vehicle in which a fixed object was struck with one resulting in an injury. Fifteen crashes occurred in daylight and 2 in darkness. All 17 were on dry roads. There was 1 hit-and-run crash reported.

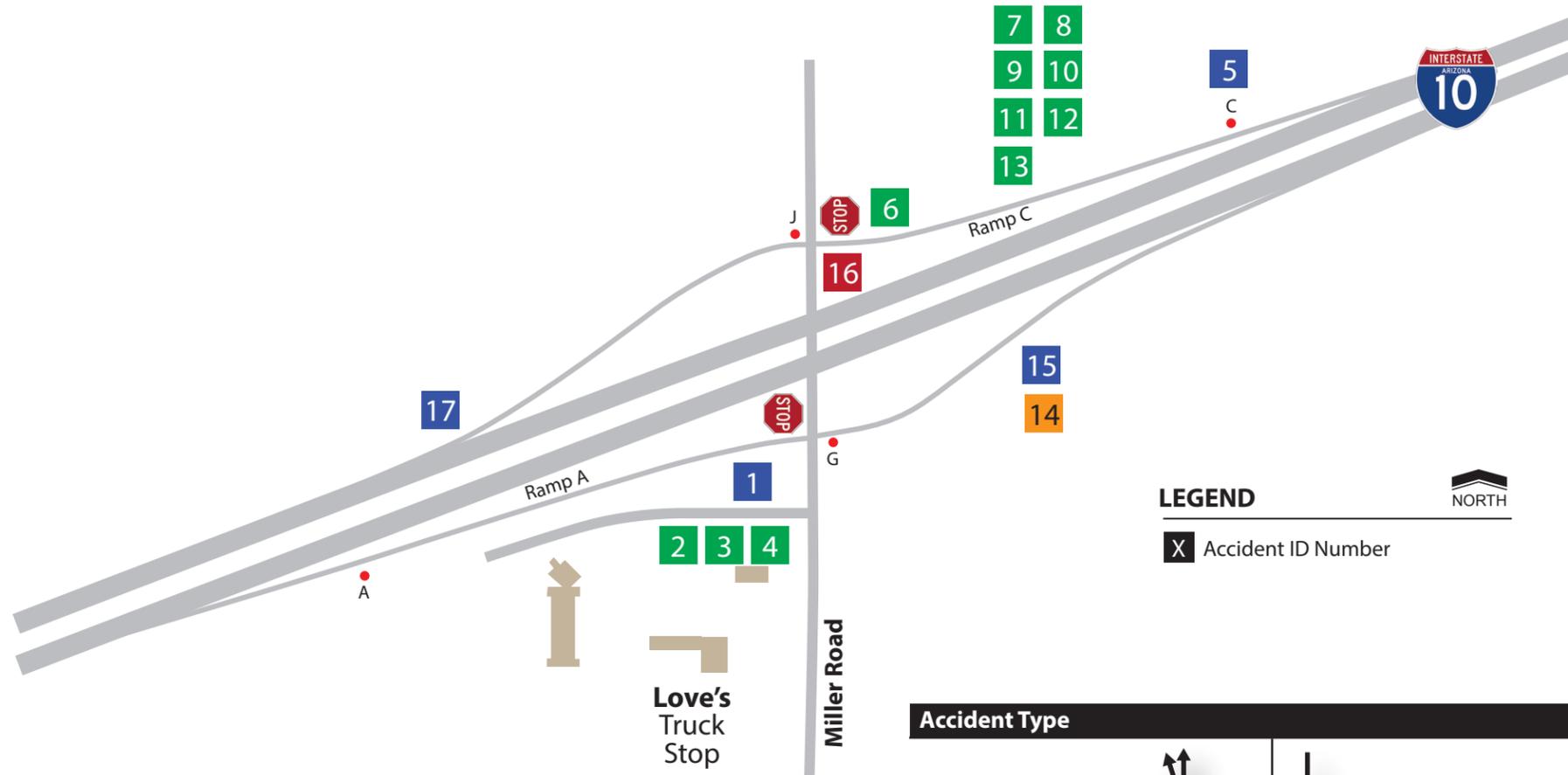
Ramp 114A (Eastbound Off-Ramp) – Four crashes were reported on the eastbound off-ramp. One was a sideswipe involving a driver changing lanes. Three were rear-end crashes, one of which resulted in an injury.

Ramp 114C (Westbound Off-Ramp) – There were nine crashes reported on the westbound off-ramp, which during the PM peak hour brings commuters home from employment centers located to the east. One of the nine was a sideswipe near the beginning of the ramp. The other eight crashes were all rear-end collisions, one involving a truck near the stop-sign at Miller Road and the others on the ramp at various places in the queuing that occurs on the ramp. Two of these other rear-end collisions involved trucks.

Ramp 114G (Eastbound On-Ramp) – There were two crashes reported on Ramp 114G, a sideswipe collision and a single-vehicle crash in which the end of a guardrail was struck. Neither crash resulted in injuries.

Ramp 114J (Westbound On-Ramp) – There was one crash reported on Ramp 114J, a sideswipe collision that resulted in an injury. The information for the second crash indicated that the driver in this single-vehicle crash was northbound and turning right before striking an “other” fixed object. The location of the crash was 100 feet from

# I-10/Miller Road Ramp Crashes

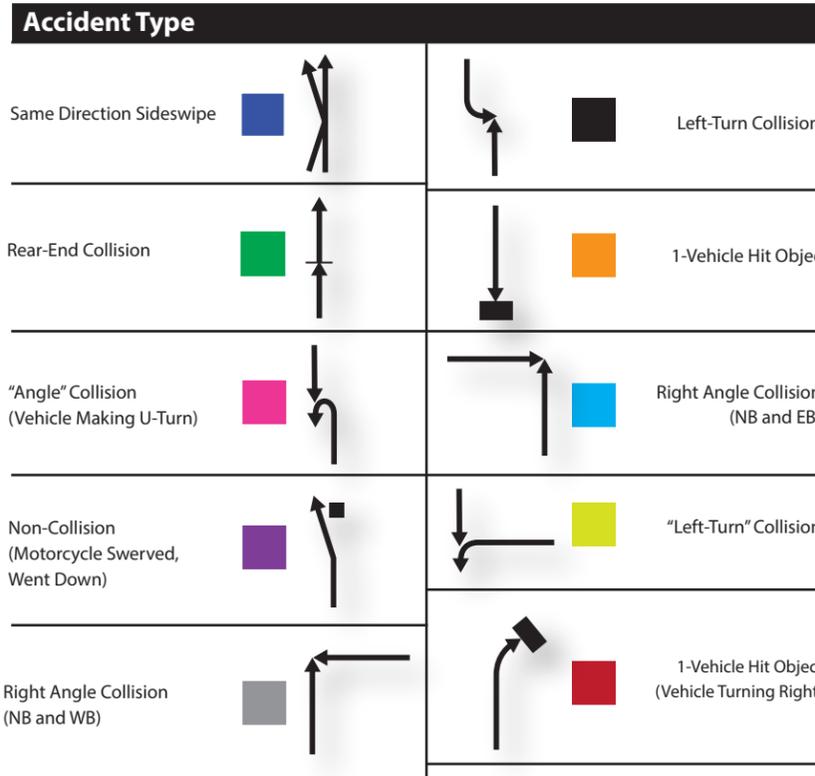


## Crash Information

### I-10 EB/WB Ramp Crash Data

ID	Date	Time	Units	Severity	Truck Involved
1	7/31/2011	2:59 PM	2	PDO	-
2	8/30/2012	4:20 PM	2	PDO	-
3	4/14/2013	9:40 AM	2	1i	-
4	7/14/2014	8:23 AM	2	PDO	-
5	2/28/2010	1:48 PM	2	1i	-
6	9/6/2012	3:21 PM	2	PDO	1
7	10/23/2012	5:41 PM	2	PDO	-
8	7/22/2013	6:21 AM	2	PDO	1
9	8/14/2013	4:12 PM	2	PDO	-
10	9/20/2013	7:50 AM	2	PDO	-
11	2/28/2014	4:35 PM	2	PDO	1
12	3/23/2014	6:01 PM	2	1i	-
13	7/21/2014	12:09 PM	2	PDO	-
14	5/3/2014	3:05 AM	1	PDO	-
15	12/26/2014	5:00 PM	2	PDO	1
16	1/29/2010	9:58 AM	1	PDO	-
17	6/22/2014	9:16 PM	2	1i	-

PDO - Property Damage Only/ # - number of persons injured



# Miller Road Crashes



## Crash Information

### Miller Road NB/SB Crash Data

ID	Date	Time	Units	Severity	Truck Involved
18	3/25/2010	11:13 PM	2	1i	-
19	1/8/2010	5:25 PM	2	1i	-
20	3/23/2010	11:53 AM	2	1i	1
21	3/18/2010	5:00 PM	2	PDO	1
22	4/11/2010	3:06 AM	1	1i	-
23	5/21/2010	12:33 PM	2	PDO	-
24	1/3/2011	11:35 AM	2	PDO	-
25	2/15/2011	6:07 PM	2	PDO	-
26	4/24/2011	5:44 PM	2	1i	-
27	5/17/2011	12:41 PM	2	PDO	1
28	11/19/2011	7:06 PM	1	PDO	-
29	12/13/2011	5:16 PM	2	1i	1
30	2/24/2012	4:29 AM	2	PDO	-
31	2/12/2012	1:15 PM	2	3i	-
32	4/27/2012	2:04 PM	2	PDO	-
33	5/10/2012	6:22 PM	2	PDO	-
34	5/12/2012	11:26 AM	2	PDO	-
35	12/21/2012	6:50 AM	1	PDO	-
36	4/25/2013	4:25 PM	2	PDO	1
37	10/8/2013	6:00 AM	2	PDO	2
38	9/11/2014	5:19 AM	2	1i	-
39	12/27/2014	10:22 PM	2	PDO	2

PDO - Property Damage Only/ # - number of persons injured

Figure 4: Collision Diagram, 2010 - 2014

marker 114J, or 100 feet *before* the marker. Since the marker in the northwest quadrant of the interchange is very close to Miller Road, the crash was recorded on the east (northbound) side of Miller Road. The driver could not legally turn right here (the vehicle would have been destined the wrong way on the westbound off-ramp); thus, from the information available it is difficult to determine with any reliability what happened. Since there was just one such crash in five years, this has not been discussed further.

*Truck Involvement.* On Miller Road south of I-10 there are two competing truck stops on the west side of Miller Road and a third, independent service station on the east side south of Durango Street that can also serve trucks and other large vehicles (recreational vehicles, etc.). Tractor-trailer traffic volumes are fairly heavy at this interchange. However, trucks were involved in only four of the 17 crashes, although there were three other vehicles reported as of other or unknown body style. Of the four trucks only one is described generically as a “truck.” The others are described as something other than a tractor-trailer (one-ton van, a cab and chassis, and a truck tractor); thus, it cannot be ascertained if any of these are tractor-trailers without actually viewing the reports of these crashes.

In two of the rear-end crashes on Ramp 114C, it was trucks stopped in traffic that were struck from behind. In the sideswipe collision involving a truck on Ramp 114G, it was the second vehicle, and not the truck, changing lanes. In the fourth crash involving a truck, the crash listing indicated that both vehicles were “turning left” from Ramp 114C, the westbound off-ramp, which is just a single lane approaching Miller Road.

**Table 1** provides a summary of the crashes by year, type, severity, and location. Crash rates cannot be provided since ramp volumes were not available.

Table 1 – I-10 at Miller Road TI Crash Summary, 2010-2014

Crash Type & Severity	2010	2011	2012	2013	2014	Total
<b>TI Total No. of Crashes</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>17</b>
<b>Ramp 114A (Eastbound Off-Ramp)</b>						
<b>Ramp Totals</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>
Injury Crashes(Injuries)				1(1)		1(1)
PDO Crashes		1	1		1	3
Single Vehicle						0
Rear-end			1	1	1	3
Sideswipe, Same Direction		1				1
*Truck-Involved Crash						0
<b>Ramp 114C (Westbound Off-Ramp)</b>						
<b>Ramp Totals</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>9</b>
Injury Crashes(Injuries)	1(1)				1(1)	2(2)
PDO Crashes			2	3	2	7
Single Vehicle						0
Rear-end			2*	3*	3*	8
Sideswipe, Same Direction	1					1
*Truck-Involved Crash			1	1	1	3
<b>Ramp 114G (Eastbound On-Ramp)</b>						
<b>Ramp Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>
Injury Crashes(Injuries)						0
PDO Crashes				1	1	2
Single Vehicle				1		1
Rear-end						0
Sideswipe, Same Direction					1*	1
*Truck-Involved Crash					1	1
<b>Ramp 114J (Westbound On-Ramp)</b>						
<b>Ramp Totals</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>
Injury Crashes(Injuries)					1(1)	1(1)
PDO Crashes	1					1
Single Vehicle	1					1
Rear-end						0
Sideswipe, Same Direction					1	1
*Truck-Involved Crash						0

### **MILLER ROAD CRASHES**

CivTech identified 22 crashes recorded on Miller Road for 2010 through 2014 in the vicinity of I-10. These crashes are also listed in **Appendix C** and shown on the right side of **Figure 4**. For purposes of this assignment, crashes on Miller Road occurring on northbound Miller Road from Pima Street north to I-10 will be considered. Neither intersection-related crashes at the signalized Miller Road/Pima Street intersection nor crashes involving southbound vehicles south of I-10 will be considered.<sup>2</sup> It should also be noted that Yuma Road was closed to the east of Miller Road during 2012; it was realigned and never reopened.

In brief, none of the crashes resulted in fatal injuries. Of the 22 crashes, eight separate crashes resulted in a total of ten bodily injuries. Nineteen of the 22 crashes involved two vehicles each: 7 of them angle collisions (one of which involved a vehicle making a U-turn in the same direction of another vehicle), 6 rear-end collisions, 4 same-direction sideswipes, and 2 left-turn collisions (one of which was actually an angle crash involving southbound and westbound vehicles colliding while the westbound vehicle was turning left). These 19 included 7 of the 8 injury crashes and resulted in 9 of the 10 injuries. The remaining 3 crashes were single-vehicle crashes with one resulting in an injury. Thirteen crashes occurred in daylight, 2 during dawn/dusk, 6 in darkness with lighting and 1 in darkness with lighting conditions unknown. One angle crash in 2011 occurred during rain on a wet surface; the other 21 in clear weather conditions on a dry road. There were 3 hit-and-run crashes reported. is a summary of the crashes by year, type, severity, and location. A summary of the involvement of trucks follows the table.

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<sup>2</sup> Since there is a traffic signal at Pima Street, it is difficult to determine from the limited, readily-available information whether or not conditions at the TI contributed to the occurrence of specific crashes at or south of Pima Street. With respect to the southbound vehicles, these have successfully exited the TI and other conditions on Miller Road (lack of capacity and/or the presence of the truck stop driveways) will be beyond the scope of any TI improvements.

Table 2 – Miller Road South of I-10 Crash Summary, 2010-2014

Crash Type & Severity	2010	2011	2012	2013	2014	Total
<b>Totals</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>22</b>
Injury Crashes(Injuries)	4(4)	2(2)	1(3)	0	1(1)	<b>8(10)</b>
PDO Crashes	2	4	5	2	1	<b>14</b>
Single Vehicle						
Hit Object		1*		1		<b>2</b>
Non-Collision	1					<b>1</b>
Left Turn						
NB thru & SB left turn		1				<b>1</b>
SB thru & WB left turn				1*		<b>1</b>
Angle						
NB & EB			1			<b>1</b>
NB & WB	1	2	2			<b>5</b>
SB & SB U-turn	1*					<b>1</b>
Rear-end						
NB	1	1	1		1	<b>4</b>
SB	1*				1	<b>2</b>
Sideswipe, Same Direction						
NB	1	1*	1*	1*		<b>4</b>
*Truck-Involved Crash	2	2	1	2	1	<b>8</b>

*Truck Involvement.* A review of the crash listing reveals that 10 trucks were involved in the 8 crashes that involved trucks. The “left turn” collision in 2013 and the southbound rear-end collision in 2014 both involved two trucks each.

## EXISTING INTERSECTION ANALYSIS

Existing traffic counts, vehicle classification counts and queueing information were used to create a Synchro model which could be validated as closely as possible to the existing observed field conditions. Human factor concerns may not be approximated correctly in Synchro traffic modeling software. Synchro was unable to validate the existing condition in the field. Alternative options for heavy vehicle factors were considered and applied to the Synchro model. Even when considering increased volumes and using a 100% heavy vehicle factor in Synchro, the model results were inconsistent with field conditions. Simulation of the traffic conditions using SimTraffic was attempted after several mathematical options had been explored. SimTraffic provided a better approximation of the existing conditions and was therefore applied to the future analysis.

### VALIDATION OF EXISTING CONDITIONS

Existing queueing was the metric utilized for model validation. The correlation between the existing observed queue and the simulated queue can be found in **Table 3** for each of the four analysis hours. The I-10 westbound off-ramp queue was the value most closely matched due to its existing observed length and frequency of rear-end collisions. This ramp has a high percentage of heavy trucks presumably using the truck stops and has a positive grade which slows heavy vehicle operation from a stopped condition.

**Table 3 – 2015 Existing Model Validation (Queue)**

6:45 AM - 7:45 AM	Movement	2015 Maximum Queue (ft)	
		Observed	Simulated
I-10 & WB Off-Ramp	NB left	250	87
I-10 & WB Off-Ramp	WB Left	275	244
I-10 & EB Off-Ramp	SB left		66
I-10 & EB Off-Ramp	NB right	225	156
I-10 & EB Off-Ramp	EB right	200	147

9:15 AM - 10:15 AM	Movement	2015 Maximum Queue (ft)	
		Observed	Simulated
I-10 & WB Off-Ramp	NB left	150	77
I-10 & WB Off-Ramp	WB Left	150	195
I-10 & EB Off-Ramp	SB left		77
I-10 & EB Off-Ramp	NB right	250	148
I-10 & EB Off-Ramp	EB right	175	140

Table 3 - Continued

1:30 PM - 2:30 PM	Movement	2015 Maximum Queue (ft)	
		Observed	Simulated
I-10 & WB Off-Ramp	NB left	255	123
I-10 & WB Off-Ramp	WB Left	475	408
I-10 & EB Off-Ramp	SB left		77
I-10 & EB Off-Ramp	NB right	175	107
I-10 & EB Off-Ramp	EB right	225	194

4:30 PM - 5:30 PM	Movement	2015 Maximum Queue (ft)	
		Observed	Simulated
I-10 & WB Off-Ramp	NB left	175	124
I-10 & WB Off-Ramp	WB Left	550	516
I-10 & EB Off-Ramp	SB left		51
I-10 & EB Off-Ramp	NB right	150	102
I-10 & EB Off-Ramp	EB right	250	203

### **ANALYSIS OF EXISTING CONDITIONS**

Peak hour capacity analyses have been conducted for the study intersections based on existing conditions and traffic volumes. All intersections have been analyzed using the methodologies presented in the *Highway Capacity Manual (HCM), Special Report 209*, Updated 2010 and using SimTraffic Software version 9.0 under the HCM 2010 methodology.

The concept of level-of-service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels-of-service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. **Table 4** lists the level of service criteria for signalized and unsignalized intersections.

**Table 4 – Level-of-Service Criteria for Signalized Intersections**

<b>Level-of-Service</b>	<b>Signalized Control Delay (sec/veh)</b>	<b>Unsignalized Control Delay (sec/veh)</b>
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Source: Exhibit 18-4, Exhibit 19-1 Highway Capacity Manual 2010

The results of the 2015 existing conditions level-of-service simulation are shown in **Table 5** for the four analysis hours. The traffic signals located at Miller Road/Pima Street and Miller Road/Durango Street do not have fixed timing. Cycle and split lengths were hand timed for several cycles and then averaged. Delay is noted for each movement with the correlating level of service denoted by color. Analysis worksheets for the existing conditions have been included in **Appendix D**.

All movements currently operate at level of service D or better during the analysis periods. The queue length experienced at the westbound off-ramp appears to be causing some adverse driving behavior and is likely the leading factor in the number of rear-end accidents experienced on the ramp.

Military activities occur on a monthly basis at an Arizona National Guard facility to the north of I-10 along Miller Road. Traffic from this function also flows to destinations to the south, contributing to the congestion.

Other short term concerns include:

- One-way approach doesn't allow for the most efficient operation of a traffic signal.
- Signals cannot be located in their ultimate condition if they are installed for short term or mid-term improvements with no roadway widening.
- An all-way stop may not be effective for the 5-year period until the mid-range improvements can be installed.
- An all-way stop could be installed immediately while waiting for a signal to be installed. This could be an option if both scenarios are found to improve the traffic operation and reduce queuing.
- There would not likely be an interim solution if the widening was advanced in the program.

Table 5 – 2015 Existing Level of Service Summary

6:45 AM - 7:45 AM	Delay and LOS												Total
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	0	0			0					5		3	4
I-10 & EB Off-Ramp		0	7	29	0		27		6				4
Pima St & Miller Rd	7	1			3	2	26		7				5
Durango St & Miller Rd	5	1	1	13	1	1	34	31	3	31	22	4	5

9:15 AM - 10:15 AM	Delay and LOS												Total
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	0	0			0					6	3	4	4
I-10 & EB Off-Ramp		0	3	20	1				4				2
Pima St & Miller Rd	4	1			1	1	22		3				4
Durango St & Miller Rd	2	1	1	5	2	1	21	19	4	28	16	3	5

1:30 PM - 2:30 PM	Delay and LOS												Total
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	2	0			0	0				19	29	19	13
I-10 & EB Off-Ramp		0	2	12	1		23		12				3
Pima St & Miller Rd	6	1			2	1	34		4				5
Durango St & Miller Rd	7	2	1	6	2	2	25	0	5	24	26	4	6

4:30 PM - 5:30 PM	Delay and LOS												Total
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	0	0			0					18		4	13
I-10 & EB Off-Ramp		0	2	7	1		25	28	19				3
Pima St & Miller Rd	6	1			2	1	31		4				4
Durango St & Miller Rd	5	3	1	12	3	1	23	20	3	27	7	3	7

**Legend:**

LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

## SHORT TERM IMPROVEMENT INTERSECTION ANALYSIS – 2020

Levels of service for the anticipated future traffic were analyzed using the same parameters established for the existing condition. The existing traffic counts and future traffic predictions from the MAG Travel Demand Model were used to develop turning movement volumes for future conditions. The evaluation includes three scenarios, the no-build condition, an all-way stop condition, and a signalized condition. Each evaluation assumed the existing lane geometry would still be in place. **Figure 5** depicts the proposed 2020 peak hour traffic volumes.

### ***SCENARIO A: NO BUILD***

The no-build condition was evaluated to establish a baseline for measurement of the all-way stop and traffic signal scenarios. The no-build condition assumes that the existing lane geometry and stop control will remain in place.

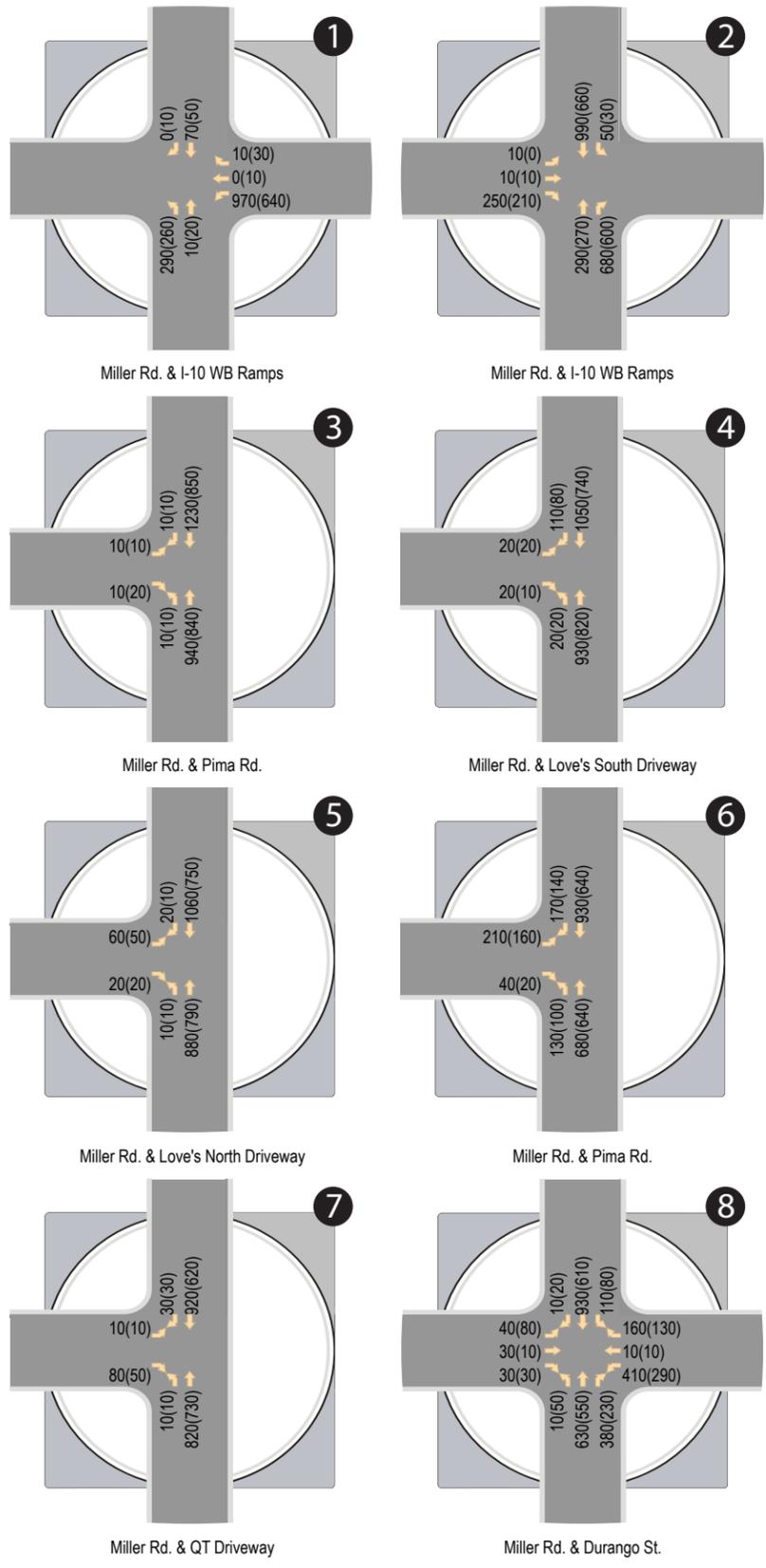
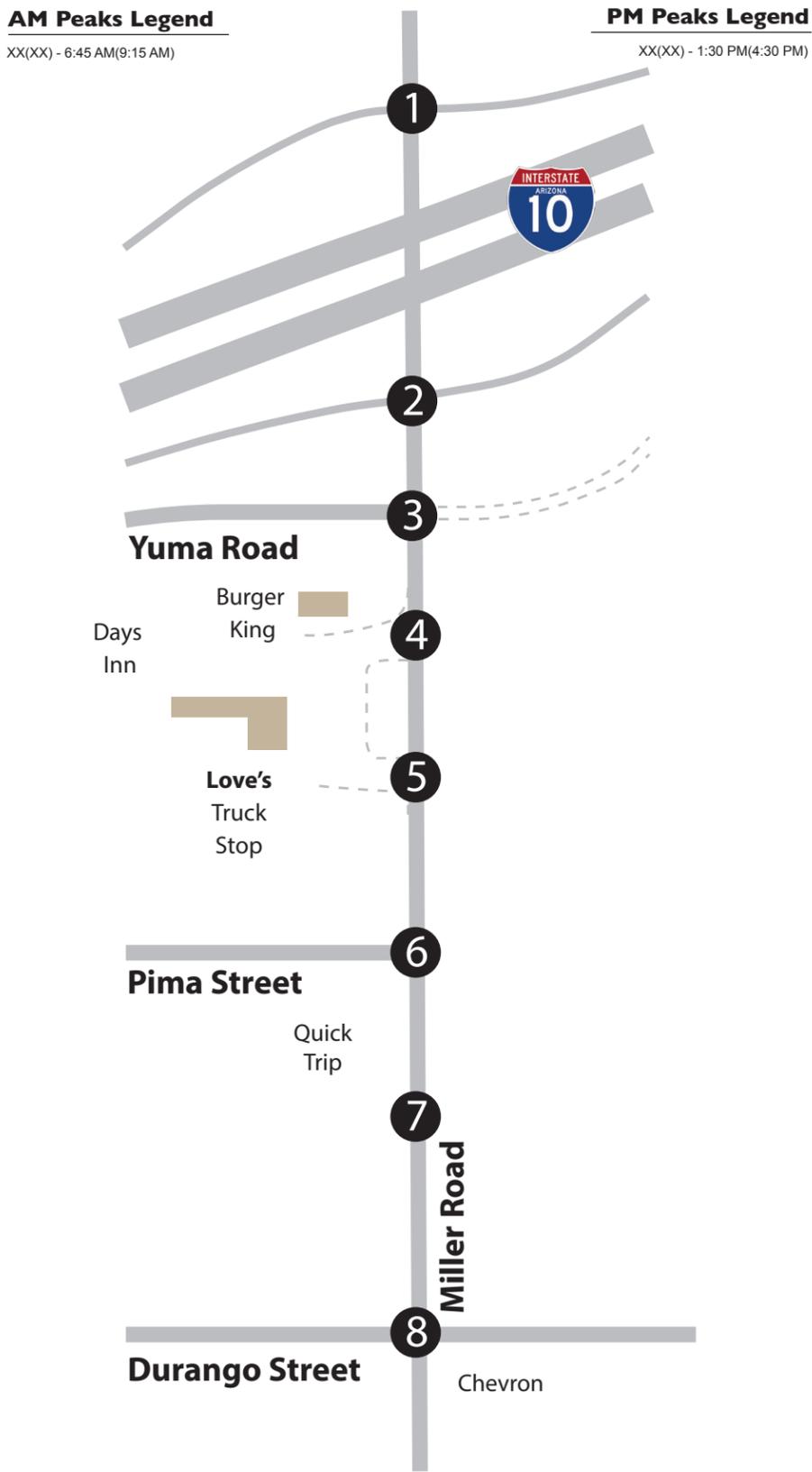
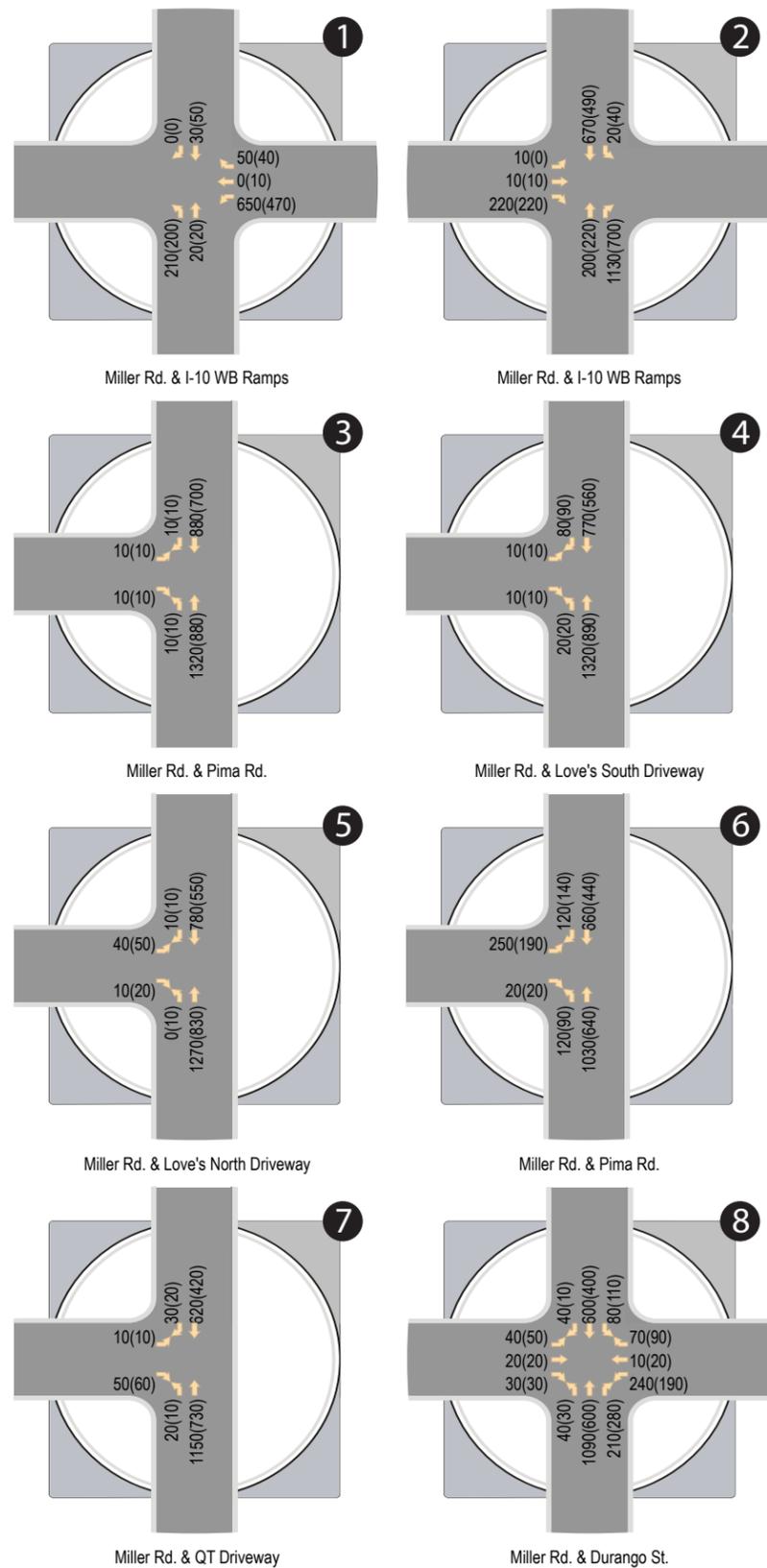
### ***SCENARIO B: ALL-WAY STOP***

The all-way stop evaluation changes the existing stop control on the off-ramp approaches and requires traffic to stop from all directions. The westbound off-ramp would provide stop control in three directions: northbound, southbound and westbound. The eastbound off-ramp would also provide stop control in three directions: northbound, southbound and eastbound. The existing lane configuration would remain.

### ***SCENARIO C: TRAFFIC SIGNAL***

Traffic signal installation is another option available to provide a short-term solution to the delay and queueing currently experienced. Two traffic signals would be constructed in this scenario, one at the eastbound ramp terminus and one at the westbound ramp terminus. The existing lane configuration would remain.

The following **Tables 6, 7, and 8** summarize the predicted delay and levels of service for these three short term scenarios. Table 9 illustrates the current observed and simulated queue lengths and the simulated 2020 queue lengths for the three scenarios.



**Figure 5: 2020 Peak Hour Traffic Volumes**

**Table 6 – 2020 No-Build Level of Service Summary**

6:45 AM - 7:45 AM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	0	0			621					503		620	
I-10 & EB Off-Ramp		0	19	2704	107		0	2523	880				122
Pima St & Miller Rd	24	102			4	2	345		116				118
Durango St & Miller Rd	37	62	15	32	5	3	52	30	6	33	11	27	39

9:15 AM - 10:15 AM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	1	0			543					521	296	455	274
I-10 & EB Off-Ramp		0	15	730	72			1725	1320				116
Pima St & Miller Rd	3	3			3	2	28		2				7
Durango St & Miller Rd	7	3	1	28	4	4	26	12	3	27	17	7	8

1:30 PM - 2:30 PM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	9	0			0	0				546	461	543	269
I-10 & EB Off-Ramp		0	6	46	1				14				5
Pima St & Miller Rd	7	2			3	1	28		3				5
Durango St & Miller Rd	14	6	2	32	5	1	29	10	5	27	9	6	11

4:30 PM - 5:30 PM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	1	0			2					412		455	248
I-10 & EB Off-Ramp		0	13	295	6		987	1727	639				67
Pima St & Miller Rd	9	2			4	2	28		3				6
Durango St & Miller Rd	28	8	3	79	8	29	21	16	7	60	63	32	21

**Legend:**

LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

**Table 7 – 2020 All-Way Stop Level of Service Summary**

6:45 AM - 7:45 AM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	6	5			4					22		22	18
I-10 & EB Off-Ramp		4	17	14	25		5	4	6				17
Pima St & Miller Rd	24	99			7	2	352		163				85
Durango St & Miller Rd	50	58	18	36	5	2	73	27	8	36	19	43	33

9:15 AM - 10:15 AM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	8	5			16					242		252	174
I-10 & EB Off-Ramp		7	36	77	87			28	12				45
Pima St & Miller Rd	29	127			9	3	362		68				103
Durango St & Miller Rd	77	82	36	23	6	1	354	129	83	30	19	81	57

1:30 PM - 2:30 PM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	19	3			8	4				326	410	365	210
I-10 & EB Off-Ramp		5	10	9	12			7	7				9
Pima St & Miller Rd	10	2			4	1	29		4				6
Durango St & Miller Rd	20	5	1	30	6	3	21	12	5	26	14	5	10

4:30 PM - 5:30 PM	Delay and LOS												Overall
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
I-10 & WB Off-Ramp	9	4			7					303		319	200
I-10 & EB Off-Ramp		5	15	16	32		16	13	7				19
Pima St & Miller Rd	14	2			6	2	29		4				8
Durango St & Miller Rd	31	9	4	44	7	0	19	19	13	66	63	36	21

**Legend:**

LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

**Table 8 – 2020 Signalized Level of Service Summary**

6:45 AM - 7:45 AM	Delay and LOS												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall
I-10 & WB Off-Ramp	11	7			8					46		52	37
I-10 & EB Off-Ramp		8	9	33	14		14	4	12				11
Pima St & Miller Rd	26	72			10	3	205		54				63
Durango St & Miller Rd	29	36	12	79	2	1	186	16	11	60	31	44	31

9:15 AM - 10:15 AM	Delay and LOS												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall
I-10 & WB Off-Ramp	14	8			14					27	28	25	23
I-10 & EB Off-Ramp		12	23	76	20			32	19				21
Pima St & Miller Rd	23	84			9	4	236		133				70
Durango St & Miller Rd	43	34	14	50	6	1	34	11	3	28	19	26	24

1:30 PM - 2:30 PM	Delay and LOS												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall
I-10 & WB Off-Ramp	26	8			22	12				187	187	194	133
I-10 & EB Off-Ramp		13	4	54	22			50	13				14
Pima St & Miller Rd	9	2			5	2	29		4				6
Durango St & Miller Rd	27	5	1	24	5	2	22	12	7	25	14	6	10

4:30 PM - 5:30 PM	Delay and LOS												
	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Overall
I-10 & WB Off-Ramp	14	8			12					226		224	154
I-10 & EB Off-Ramp		11	5	55	23		47	19	18				15
Pima St & Miller Rd	19	1			11	6	32		4				9
Durango St & Miller Rd	43	10	3	174	11	0	24	12	10	41	35	16	21

**Legend:**

LOS A
LOS B
LOS C
LOS D
LOS E
LOS F

Table 9 – 2020 Queue Comparison

6:45 AM - 7:45 AM	Movement	2015 Maximum Queue (ft)		2020 Maximum Simulated Queue (ft)		
		Observed	Simulated	No Build	All-way Stop	Signal (1-Lane)
I-10 & WB Off-Ramp	NB left	250	87	64	175	168
I-10 & WB Off-Ramp	WB Left	275	244	1,517	704	1,067
I-10 & EB Off-Ramp	SB left		66	125	174	174
I-10 & EB Off-Ramp	NB right	225	156	187	170	163
I-10 & EB Off-Ramp	EB right	200	147	1,274	206	171

9:15 AM - 10:15 AM	Movement	2015 Maximum Queue (ft)		2020 Maximum Simulated Queue (ft)		
		Observed	Simulated	No Build	All-way Stop	Signal (1-Lane)
I-10 & WB Off-Ramp	NB left	150	77	147	161	163
I-10 & WB Off-Ramp	WB Left	150	195	1,565	1,565	721
I-10 & EB Off-Ramp	SB left		77	123	124	125
I-10 & EB Off-Ramp	NB right	250	148	170	180	182
I-10 & EB Off-Ramp	EB right	175	140	1,296	243	270

1:30 PM - 2:30 PM	Movement	2015 Maximum Queue (ft)		2020 Maximum Simulated Queue (ft)		
		Observed	Simulated	No Build	All-way Stop	Signal (1-Lane)
I-10 & WB Off-Ramp	NB left	255	123	167	165	165
I-10 & WB Off-Ramp	WB Left	475	408	1,565	1,565	1,565
I-10 & EB Off-Ramp	SB left		77	84	125	125
I-10 & EB Off-Ramp	NB right	175	107	158	164	165
I-10 & EB Off-Ramp	EB right	225	194	263	277	283

4:30 PM - 5:30 PM	Movement	2015 Maximum Queue (ft)		2020 Maximum Simulated Queue (ft)		
		Observed	Simulated	No Build	All-way Stop	Signal (1-Lane)
I-10 & WB Off-Ramp	NB left	175	124	112	162	164
I-10 & WB Off-Ramp	WB Left	550	516	1,565	1,565	1,565
I-10 & EB Off-Ramp	SB left		51	122	125	125
I-10 & EB Off-Ramp	NB right	150	102	181	166	200
I-10 & EB Off-Ramp	EB right	250	203	1,285	223	291

## SUMMARY OF FINDINGS

A review of the future analysis indicates that both the all-way stop condition and the signalized condition provide very little benefit in the future. While some movements would improve both queuing and delay, other movements would increase both queuing and delay. The all-way stop option and signalized options do not seem to provide a major benefit over the existing condition when considering future traffic volumes.

Queue Storage at Love's has already improved for Miller Road due to movement of their scale away from the queue line. The movement of the scale prior to the commencement of this study has not allowed the CivTech team to observe previous issues noted by the stakeholder team. Buckeye City Engineer Scott Zipprich mentioned that new development was being proposed that would include a truck wash on the other side of the motel. Motel guests are predominantly truckers. ADOT has suggested short term queuing solutions but ultimately, Yuma Road will need to be closed at Miller to accommodate widening of I-10 and a reconstructed service interchange at Miller Road.

## FUTURE ACTIONS

The AZTEC report called for an urban diamond interchange. A single point urban interchange might be more accommodating of the volumes to be generated by the commercial activities near the interchange.

Buckeye is also updating their Transportation Master Plan and their General Plan. Those activities should include an overview of the ultimate service interchange spacing in the Buckeye Municipal Planning Area.

## CONCLUSIONS

The short term scenarios did not provide queue relief. Until the widening of the I-10 freeway and Miller Road can occur, we suggest that the following supplemental steps be taken to address the issues surrounding the interchange:

The City of Buckeye should investigate all possibilities for extending and expanding their local and collector roadway network south of I-10 on both sides of Miller Road. The use of Pima Street and Durango Street as well as new north south connections can help spread the access points to existing and future commercial uses in relief of Miller Road. This may include a frontage road west of (but not connecting to) Miller Road, which could, in part, provide access to the Days Inn Motel when Yuma Road access to Miller road is closed in support of I-10 widening and a new interchange. The City should coordinate this closely with ADOT as this may prevent arguments that the closure of Yuma Road constitutes a "total take" of the motel property.

As part of the ongoing Buckeye Transportation Master Plan (TMP) update, the City should clarify the ultimate cross section of Miller road south of I-10, and

attempt to identify the total right of way needed to achieve this cross section. In some locations, the center line of the roadway may need to be adjusted east or west.

The City of Buckeye, through the TMP update, should identify access management policies for commercial arterial corridors such as Miller Road.

All of the above steps should be incorporated into the planning activities of the upcoming MAG I-10 Hassayampa Valley Framework update, which should identify potential locations of new service interchanges with I-10 and circulation networks in support of the future I-11 alignment. That facility will generate considerable interest for commercial activities targeted to truck freight clientele, and the lessons learned on Miller Road can help guide new roadway design and development standards to the west.

## LIST OF REFERENCES

*A Policy on Geometric Design (Green Book)*. American Association of State and Highway Transportation Officials, Washington D.C., 2004.

*Highway Capacity Manual*. Transportation Research Board, National Research Council, Washington D.C., 2010.

*Manual of Uniform Traffic Control Devices*, U.S. Department of Transportation, Federal Highways Administration, Washington D.C., 2009.

Maricopa Association of Governments 2020 Regional Transportation Model Traffic Volumes

Maricopa Association of Governments 2035 Regional Transportation Model Traffic Volumes

*Miller Road Interim Improvements at I-10*, AzTec Engineering, December 2014

*I-10 Miller Road TI Replacement CRA Workshop Cost Summary Sheet*, HDR Engineering, June 2015

## **TECHNICAL APPENDIX**

<b>APPENDIX A:</b>	<b>EXISTING TRAFFIC COUNTS</b>
<b>APPENDIX B:</b>	<b>EXISTING QUEUEING OBSERVATION</b>
<b>APPENDIX C:</b>	<b>FIVE YEAR CRASH DATA</b>
<b>APPENDIX D:</b>	<b>2015 ANALYSIS WORKSHEETS</b>
<b>APPENDIX E:</b>	<b>2020 MAG MODEL PROJECTIONS</b>
<b>APPENDIX F:</b>	<b>2020 TURNING MOVEMENT VOLUMES</b>
<b>APPENDIX G:</b>	<b>2020 NO-BUILD ANALYSIS WORKSHEETS</b>
<b>APPENDIX H:</b>	<b>2020 ALL-WAY STOP CONTROL ANALYSIS WORKSHEETS</b>
<b>APPENDIX I:</b>	<b>2020 SIGNALIZED STOP ANALYSIS WORKSHEETS</b>

## **APPENDIX A**

### **EXISTING TRAFFIC COUNTS**

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

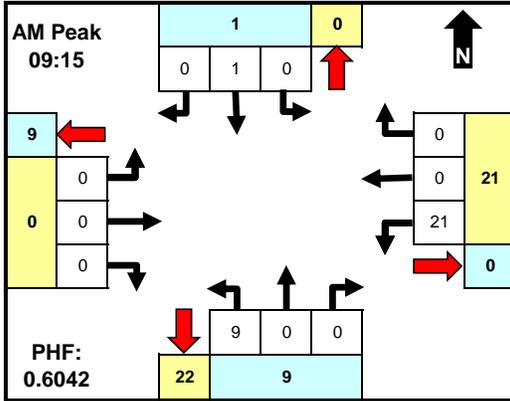
Client: CivTech  
 File Number: 1502999  
 Route: N MILLER RD  
 Location: Btwn I-10 EB RAMPS & YUMA RD

Site Ref: 1  
 Direction: NB  
 Latitude: 33.43262  
 Longitude: -112.59076

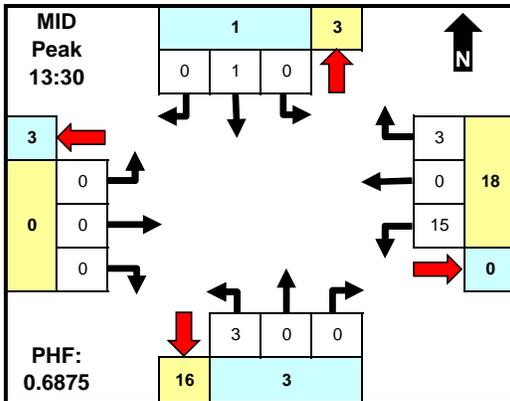
Date/Time	Total	cls01	cls02	cls03	cls04	cls05	cls06	cls07	cls08	cls09	cls10	cls11	cls12	cls13	pct SU	pct CB			
9/1/2015 0:00	66	14	25	11	0	0	11	0	2	2	1	0	0	0	40.0%	0.7%	35.0		6.0%
9/1/2015 0:15	61	7	28	9	3	0	4	0	2	8	0	0	0	0	19.0%	1.4%	42.0		7.0%
9/1/2015 0:30	64	11	22	8	0	0	9	0	0	14	0	0	0	0	20.0%	1.9%	36.0		6.1%
9/1/2015 0:45	61	7	22	12	1	1	4	0	2	11	1	0	0	0	10.5%	1.9%	30.0		5.7%
9/1/2015 1:00	43	7	15	6	1	0	2	0	2	9	1	0	0	0	11.8%	1.7%	21.0		4.3%
9/1/2015 1:15	44	9	10	12	2	1	6	0	0	2	0	2	0	0	33.3%	0.6%	17.0		3.5%
9/1/2015 1:30	50	7	18	10	0	0	4	0	2	8	1	0	0	0	14.8%	1.5%	23.0		4.2%
9/1/2015 1:45	47	4	26	9	2	0	2	0	1	2	0	1	0	0	9.7%	0.6%	21.0		3.8%
9/1/2015 2:00	48	9	14	8	1	0	10	0	1	5	0	0	0	0	24.1%	0.8%	28.0		4.7%
9/1/2015 2:15	66	9	22	18	0	1	7	0	0	8	1	0	0	0	12.9%	1.3%	32.0		5.4%
9/1/2015 2:30	49	5	13	12	2	3	6	0	1	6	1	0	0	0	15.4%	1.1%	29.0		5.6%
9/1/2015 2:45	60	4	26	10	0	4	5	0	0	9	1	1	0	0	23.3%	1.5%	33.0		6.1%
9/1/2015 3:00	67	8	20	21	1	1	5	0	1	9	1	0	0	0	17.6%	1.5%	38.0		7.0%
9/1/2015 3:15	98	14	32	24	3	2	13	0	2	5	2	0	0	1	17.9%	1.4%	33.0		6.3%
9/1/2015 3:30	88	9	36	20	2	1	8	0	1	10	1	0	0	0	10.9%	1.7%	38.0		7.1%
9/1/2015 3:45	116	7	42	35	2	1	11	1	2	14	1	0	0	0	14.9%	2.4%	31.0		6.3%
9/1/2015 4:00	118	6	66	35	0	1	4	0	0	4	1	1	0	0	4.8%	0.8%	27.0		5.7%
9/1/2015 4:15	142	7	79	32	2	1	5	0	3	10	0	2	1	0	6.4%	2.2%	32.0		7.1%
9/1/2015 4:30	147	5	76	48	4	2	6	0	2	3	1	0	0	0	7.4%	0.8%	33.0		6.4%
9/1/2015 4:45	180	7	89	61	2	1	7	0	2	10	1	0	0	0	4.3%	1.8%	39.0		7.1%
9/1/2015 5:00	188	6	102	58	0	0	6	0	4	9	2	0	0	1	4.6%	2.2%	33.0		6.0%
9/1/2015 5:15	205	11	110	64	0	1	8	0	0	11	0	0	0	0	4.8%	1.5%	30.0		5.2%
9/1/2015 5:30	205	7	103	75	3	0	5	1	1	9	0	1	0	0	3.9%	1.5%	30.0		5.7%
9/1/2015 5:45	219	5	123	77	1	2	5	1	1	4	0	0	0	0	4.0%	0.7%	33.0		6.5%
9/1/2015 6:00	249	5	147	79	2	1	5	0	2	6	2	0	0	0	1.7%	1.4%	39.0		7.7%
9/1/2015 6:15	302	9	185	76	5	4	8	0	2	11	2	0	0	0	4.1%	2.1%	44.0	1246.0	8.5%
9/1/2015 6:30	288	10	183	66	3	2	6	1	1	12	1	1	0	2	4.0%	2.4%	41.0	1255.0	8.1%
9/1/2015 6:45	333	18	190	90	6	5	11	0	3	10	0	0	0	0	8.3%	1.8%	39.0	1268.0	8.1%
9/1/2015 7:00	323	17	181	90	5	1	13	0	3	11	0	0	0	2	7.3%	2.2%	40.0	1224.0	8.2%
9/1/2015 7:15	311	15	190	82	4	0	7	1	4	8	0	0	0	0	2.8%	1.7%	41.0	1172.0	8.4%
9/1/2015 7:30	301	18	166	82	1	3	14	0	2	10	2	0	0	3	7.4%	2.4%	48.0	1096.0	8.8%
9/1/2015 7:45	289	13	156	87	2	4	13	0	0	11	0	0	0	3	6.6%	1.9%	53.0	1049.0	8.9%
9/1/2015 8:00	271	16	146	78	2	2	9	1	2	12	2	1	0	0	4.4%	2.4%	55.0	1006.0	9.3%
9/1/2015 8:15	235	9	115	73	4	5	13	1	0	15	0	0	0	0	9.9%	2.1%	63.0		10.4%
9/1/2015 8:30	254	18	132	67	3	3	13	0	2	15	1	0	0	0	7.7%	2.5%	68.0		11.8%
9/1/2015 8:45	246	28	101	67	6	7	19	1	3	13	0	0	1	0	15.1%	2.4%	80.0		13.6%
9/1/2015 9:00	253	16	128	60	9	3	12	0	2	20	1	0	0	2	8.9%	3.5%	87.0		14.9%
9/1/2015 9:15	225	13	109	61	6	1	10	0	2	20	3	0	0	0	3.9%	3.5%	95.0	953.0	15.6%
9/1/2015 9:30	274	24	133	57	8	3	18	0	2	27	0	1	0	1	11.4%	4.3%	90.0		14.5%
9/1/2015 9:45	226	13	99	67	6	2	13	0	3	20	2	0	0	1	7.6%	3.6%	79.0		12.7%
9/1/2015 10:00	228	13	100	65	2	6	12	0	2	28	0	0	0	0	11.4%	4.2%	74.0		11.4%
9/1/2015 10:15	191	14	91	49	2	1	17	0	1	15	1	0	0	0	11.5%	2.4%	65.0		10.7%
9/1/2015 10:30	213	11	97	72	1	4	10	0	1	16	0	0	0	1	9.5%	2.5%	76.0		12.7%
9/1/2015 10:45	209	8	92	74	6	2	9	1	2	15	0	0	0	0	10.6%	2.4%	83.0		14.3%
9/1/2015 11:00	206	7	104	61	3	0	6	0	4	19	0	0	0	2	2.8%	3.5%	87.0	879.0	15.6%
9/1/2015 11:15	231	10	98	74	3	4	10	1	1	26	3	0	0	1	9.1%	4.3%	88.0		15.6%
9/1/2015 11:30	253	14	116	76	1	3	13	0	2	23	1	0	2	2	8.8%	4.2%	80.0		14.6%
9/1/2015 11:45	189	7	86	57	2	2	8	1	1	19	3	0	0	3	6.9%	3.6%	78.0		14.1%
9/1/2015 12:00	221	8	88	78	7	3	11	1	3	20	0	0	0	2	8.9%	3.5%	80.0		13.8%
9/1/2015 12:15	222	12	100	70	6	2	8	0	1	18	4	0	0	1	7.3%	3.3%	85.0		14.3%
9/1/2015 12:30	218	6	94	76	3	4	9	0	0	21	2	0	1	2	6.5%	3.6%	89.0		14.2%
9/1/2015 12:45	216	6	110	61	6	0	9	0	1	21	1	0	0	1	10.0%	3.3%	91.0		14.3%
9/1/2015 13:00	246	14	113	71	2	4	13	0	2	25	0	1	0	1	7.3%	4.0%	92.0		14.6%
9/1/2015 13:15	266	13	143	75	0	3	9	0	1	22	0	0	0	0	6.1%	3.2%	99.0		16.2%
9/1/2015 13:30	216	6	112	57	1	2	9	2	1	23	1	0	1	1	5.6%	3.8%	95.0	968.0	16.7%
9/1/2015 13:45	239	10	115	70	1	3	13	1	1	22	1	0	0	2	5.4%	3.6%	94.0		16.3%
9/1/2015 14:00	262	14	122	69	3	6	8	0	3	32	3	1	0	1	9.3%	5.6%	95.0	1058.0	16.7%
9/1/2015 14:15	251	14	127	67	3	2	10	1	4	18	2	3	0	0	7.9%	3.8%	76.0	1060.0	13.9%
9/1/2015 14:30	261	15	123	82	2	1	14	0	1	22	0	0	0	1	7.3%	3.3%	71.0	1066.0	12.5%
9/1/2015 14:45	284	12	132	98	6	1	5	1	1	23	4	0	0	1	5.0%	4.0%	67.0	1115.0	12.5%
9/1/2015 15:00	264	14	137	81	3	2	7	0	3	13	0	1	0	3	7.8%	2.8%	58.0	1128.0	11.1%
9/1/2015 15:15	257	6	133	93	3	1	4	0	2	13	1	0	0	1	4.4%	2.4%	59.0	1151.0	11.1%
9/1/2015 15:30	310	18	145	105	2	1	15	0	2	18	2	1	0	1	6.7%	3.3%	66.0	1206.0	12.3%
9/1/2015 15:45	297	7	184	77	2	2	6	0	3	14	0	0	0	2	4.4%	2.6%	66.0	1222.0	11.8%
9/1/2015 16:00	287	11	160	86	0	0	9	1	4	14	2	0	0	0	4.0%	2.8%	67.0	1235.0	12.0%
9/1/2015 16:15	312	6	180	88	3	4	6	0	1	20	3	0	0	1	3.4%	3.5%	73.0	1256.0	12.5%
9/1/2015 16:30	326	16	191	80	3	2	13	0	3	18	0	0	0	0	7.9%	2.9%	71.0	1258.0	12.1%
9/1/2015 16:45	310	13	178	85	0	1	13	0	2	15	1	1	0	0	4.3%	2.8%	69.0	1235.0	12.7%
9/1/2015 17:00	308	17	175	79	2	3	8	0	4	20	0	0	0	0	5.0%	3.3%	63.0	1204.0	11.7%
9/1/2015 17:15	314	15	193	65	3	1	15	0	1	18	1	0	0	2	6.9%	3.1%	61.0	1193.0	11.7%
9/1/2015 17:30	303	9	167	88	3	0	11	0	3	16	2	0	0	4	7.1%	3.5%	59.0	1100.0	11.4%
9/1/2015 17:45	279	9	178	66	2	1	10	0	0	9	2	1	0	1	6.8%	1.8%	55.0		10.2%
9/1/2015 18:00	297	9	170	81	4	2	7	0	2	18	4	0	0	0	4.7%	3.3%	62.0		11.4%
9/1/2015 18:15	221	12	113	58	0	1	17	0	0	16	1	0	1	2	4.5%	2.8%	56.0		10.2%
9/1/2015 18:30	301	15	179	74	2	5	10	0	3	12	0	0	0	1	8.7%	2.2%	59.0		10.6%
9/1/2015 18:45	222	9	122	60	1	1	7	0	2	16	2	0	0	2	3.4%	3.1%	58.0		10.4%
9/1/2015 19:00	249	13	125	74	4	0	18	0	3	12	0	0	0	0	7.5%	2.1%	51.0		9.5%
9/1/2015 19:15	202	13	104	48	3	0	11	0	2										



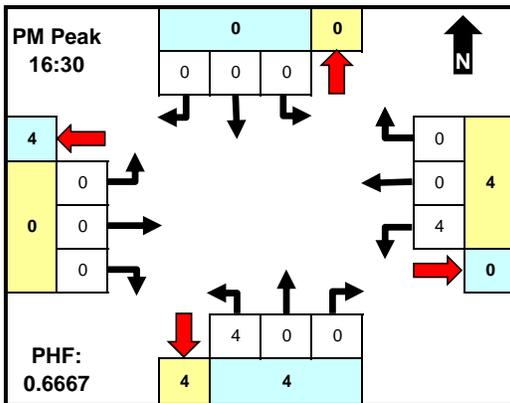
Intersection TMC: M500422  
Count Date: 9/1/2015



Time	From North MILLER RD				From East I-10 WB OFF RAMP				From South MILLER RD				From West I-10 WB ON RAMP				TOTAL
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	
6:45	0	3	0	0	3	0	1	0	1	1	0	0	0	0	0	0	9
7:00	0	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	4
7:15	0	0	0	0	9	0	0	0	1	0	0	0	0	0	0	0	10
7:30	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3
9:15	0	1	0	0	4	0	0	0	1	0	0	0	0	0	0	0	6
9:30	0	0	0	0	7	0	0	0	5	0	0	0	0	0	0	0	12
9:45	0	0	0	0	5	0	1	0	1	0	0	0	0	0	0	0	7
10:00	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>55</b>
<b>Pk Hr 9:15 AM</b>																	
Pk Vol	0	1	0	0	19	0	2	0	7	0	0	0	0	0	0	0	29
PHF	0.000	0.250	0.000	0.000	0.679	0.000	0.500	0.000	0.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.604



Time	From North MILLER RD				From East I-10 WB OFF RAMP				From South MILLER RD				From West I-10 WB ON RAMP				TOTAL
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	
13:30	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	0	6
13:45	0	0	0	0	5	0	2	0	1	0	0	0	0	0	0	0	8
14:00	0	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	5
14:15	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>
<b>Pk Hr 1:30 PM</b>																	
Pk Vol	0	1	0	0	15	0	3	0	3	0	0	0	0	0	0	0	22
PHF	0.000	0.250	0.000	0.000	0.750	0.000	0.375	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688



Time	From North MILLER RD				From East I-10 WB OFF RAMP				From South MILLER RD				From West I-10 WB ON RAMP				TOTAL
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	
16:30	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
16:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
17:15	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	3
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>
<b>Pk Hr 4:30 PM</b>																	
Pk Vol	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	8
PHF	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	9:15 AM	29	9:30 AM	12	0.604
MID	1:30 PM	22	1:45 PM	8	0.688
PM	4:30 PM	8	5:15 PM	3	0.667

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	6:45 AM	3	0.250	9:15 AM	21	0.750	6:45 AM	8	0.400	6:45 AM	8	0.400
MID	1:30 PM	1	0.250	1:30 PM	18	0.643	1:30 PM	3	0.375	1:30 PM	3	0.375
PM	12:00 AM	0	0.000	4:30 PM	4	0.500	4:30 PM	4	0.500	4:30 PM	4	0.500

**Comments**

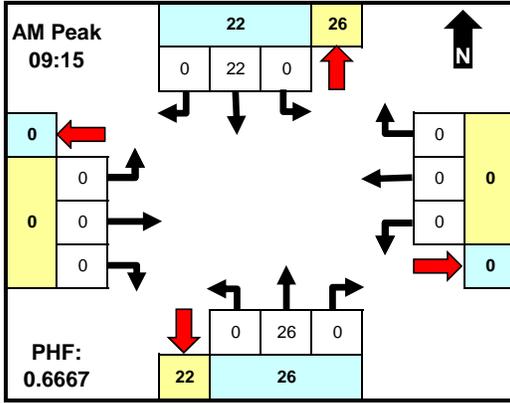
**Approach & Departure Volumes (No Peds)**

Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	4	4	36	0	15	37	0	14
MID	1	3	18	0	3	16	0	3
PM	0	0	4	0	4	4	0	4

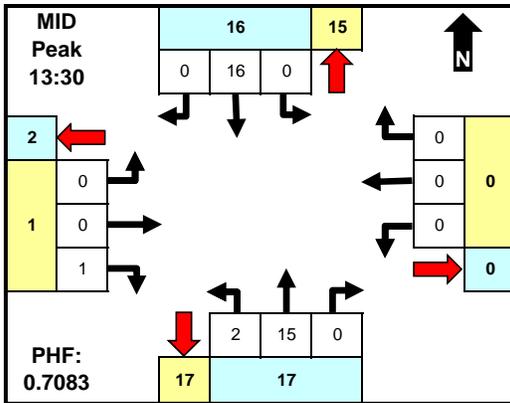




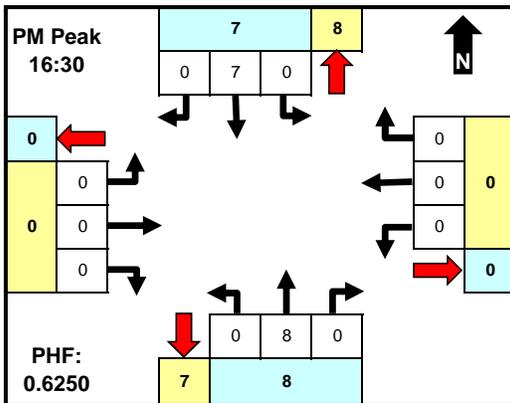
Intersection TMC: M500423  
Count Date: 9/1/2015



Time	From North MILLER RD				From East YUMA RD				From South MILLER RD				From West YUMA RD				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
6:45	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	6
7:00	0	1	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	10
7:15	0	8	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	14
7:30	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
9:15	0	6	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	10
9:30	0	8	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	18
9:45	0	5	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	11
10:00	0	4	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	9
<b>Total</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>84</b>
<b>Pk Hr</b> 9:15 AM																		
<b>Pk Vol</b>	0	22	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	48
<b>PHF</b>	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.667



Time	From North MILLER RD				From East YUMA RD				From South MILLER RD				From West YUMA RD				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
13:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
13:45	0	6	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	12
14:00	0	4	0	0	0	0	0	0	0	0	6	0	0	0	0	1	0	11
14:15	0	3	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	8
<b>Total</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>34</b>
<b>Pk Hr</b> 1:30 PM																		
<b>Pk Vol</b>	0	16	0	0	0	0	0	0	0	2	15	0	0	0	0	1	0	34
<b>PHF</b>	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.625	0.000	0.000	0.000	0.000	0.250	0.000	0.708



Time	From North MILLER RD				From East YUMA RD				From South MILLER RD				From West YUMA RD				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
16:30	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
16:45	0	4	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	6
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Pk Hr</b> 4:30 PM																		
<b>Pk Vol</b>	0	7	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	15
<b>PHF</b>	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.625

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	9:15 AM	48	9:30 AM	18	0.667
MID	1:30 PM	34	1:45 PM	12	0.708
PM	4:30 PM	15	4:45 PM	6	0.625

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	9:15 AM	23	0.719	9:15 AM	0	0.719	9:15 AM	25	0.625	9:15 AM	0	0.625
MID	1:30 PM	16	0.667	1:30 PM	0	0.667	1:30 PM	17	0.708	1:30 PM	1	0.250
PM	4:30 PM	7	0.438	4:30 PM	0	0.438	4:30 PM	8	0.667	4:30 PM	0	0.667

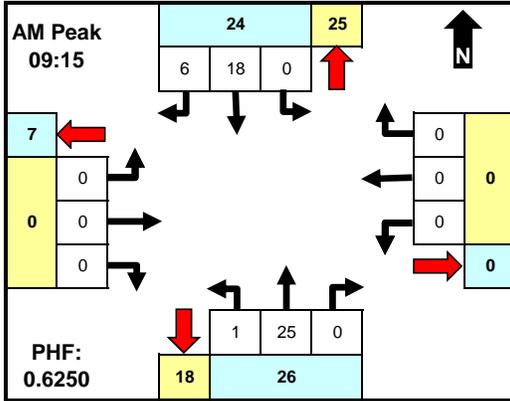
**Comments**

**Approach & Departure Volumes (No Peds)**

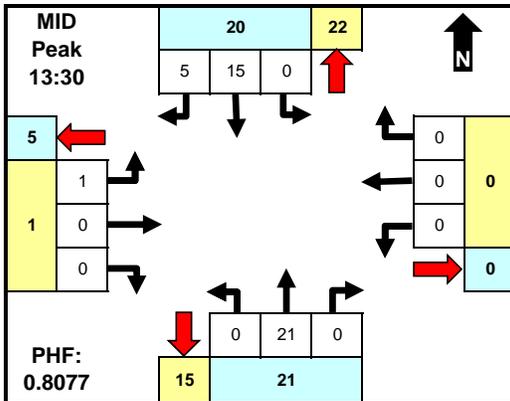
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	36	48	0	0	48	36	0	0
MID	16	15	0	0	17	17	1	2
PM	7	8	0	0	8	7	0	0



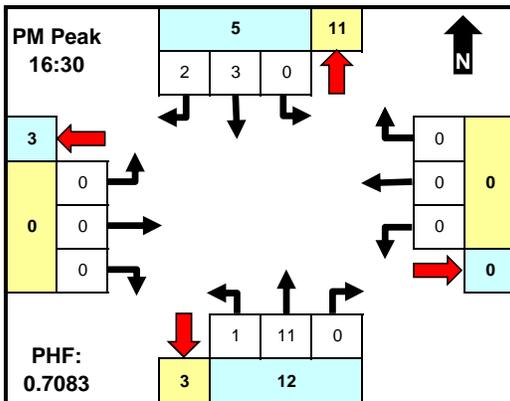
Intersection TMC: M500424  
Count Date: 9/1/2015



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West LOVES NORTH DRIVEW.				INTSEC	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
6:45	0	4	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	7
7:00	0	0	1	0	0	0	0	0	0	8	0	0	0	0	0	0	0	10
7:15	0	7	2	0	0	0	0	0	0	5	0	0	0	0	0	0	0	14
7:30	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	6
9:15	0	4	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	10
9:30	0	5	3	0	0	0	0	0	0	12	0	0	0	0	0	0	0	20
9:45	0	3	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	10
10:00	0	3	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	10
<b>Total</b>	<b>0</b>	<b>28</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>87</b>
<b>Pk Hr</b>																	<b>9:15 AM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>18</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>
<b>PHF</b>	<b>0.000</b>	<b>0.643</b>	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.521</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.625</b>



Time	From North				From East				From South				From West				TOTAL	
	LT	Thru	RT	Ped														
13:30	0	5	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7
13:45	0	4	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	11
14:00	0	2	1	0	0	0	0	0	0	7	0	0	1	0	0	0	0	11
14:15	0	4	2	0	0	0	0	0	0	7	0	0	0	0	0	0	0	13
<b>Total</b>	<b>0</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>42</b>						
<b>Pk Hr</b>																	<b>1:30 PM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>42</b>						
<b>PHF</b>	<b>0.000</b>	<b>0.750</b>	<b>0.625</b>	<b>0.000</b>	<b>0.750</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.808</b>						



Time	From North				From East				From South				From West				TOTAL	
	LT	Thru	RT	Ped														
16:30	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	5
16:45	0	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	6
17:00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
17:15	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>
<b>Pk Hr</b>																	<b>4:30 PM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>
<b>PHF</b>	<b>0.000</b>	<b>0.750</b>	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.688</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.708</b>

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	9:15 AM	50	9:30 AM	20	0.625
MID	1:30 PM	42	2:15 PM	13	0.808
PM	4:30 PM	17	4:45 PM	6	0.708

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	9:15 AM	21	0.656	9:15 AM	0	0.656	9:15 AM	29	0.604	6:45 AM	1	0.250
MID	1:30 PM	20	0.833	1:30 PM	0	0.833	1:30 PM	21	0.750	1:30 PM	1	0.250
PM	4:30 PM	5	0.417	4:30 PM	0	0.417	4:30 PM	12	0.750	4:30 PM	0	0.750

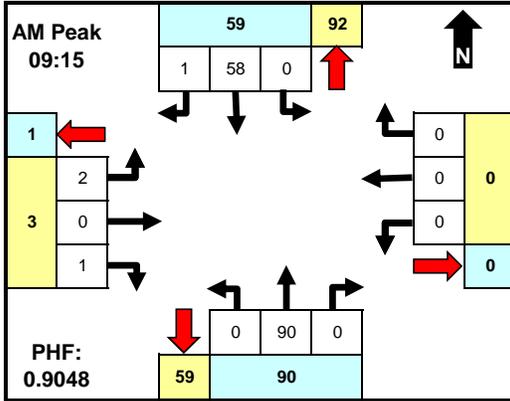
**Comments**

**Approach & Departure Volumes (No Peds)**

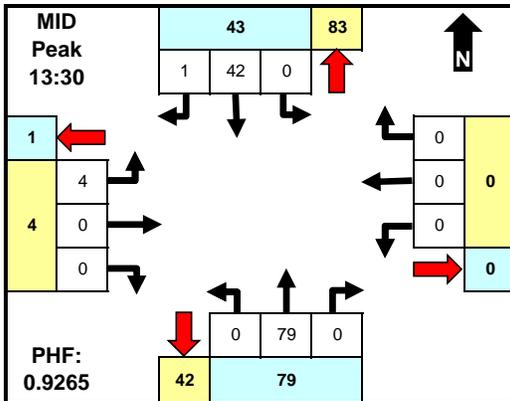
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	38	48	0	0	48	28	1	11
MID	20	22	0	0	21	15	1	5
PM	5	11	0	0	12	3	0	3



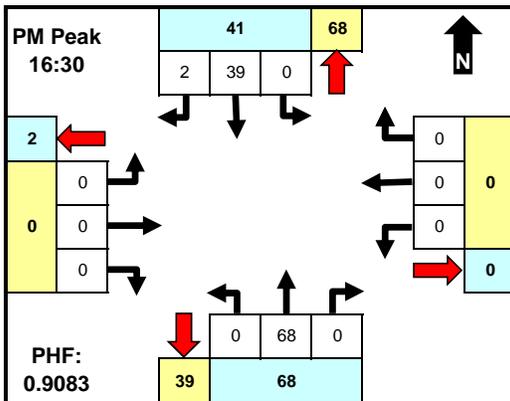
Intersection TMC: A500425  
Count Date: 9/1/2015



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West SOUTH LOVES DRIVE/W				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
6:45	0	12	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	23
7:00	0	5	0	0	0	0	0	0	0	0	14	0	0	1	0	0	0	20
7:15	0	3	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	11
7:30	0	4	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	24
9:15	0	22	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	39
9:30	0	12	0	0	0	0	0	0	0	0	29	0	0	1	0	0	0	42
9:45	0	13	0	0	0	0	0	0	0	0	16	0	0	1	0	1	0	31
10:00	0	11	1	0	0	0	0	0	0	0	28	0	0	0	0	0	0	40
<b>Total</b>	<b>0</b>	<b>82</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>143</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>230</b>
Pk Hr																	9:15 AM	
Pk Vol	0	58	1	0	0	0	0	0	0	0	90	0	0	2	0	1	0	152
PHF	0.000	0.659	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.776	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.905



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West SOUTH LOVES DRIVE/W				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
13:30	0	10	1	0	0	0	0	0	0	0	16	0	0	0	0	0	0	27
13:45	0	12	0	0	0	0	0	0	0	0	19	0	0	3	0	0	0	34
14:00	0	10	0	0	0	0	0	0	0	0	23	0	0	1	0	0	0	34
14:15	0	10	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	31
<b>Total</b>	<b>0</b>	<b>42</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>126</b>
Pk Hr																	1:30 PM	
Pk Vol	0	42	1	0	0	0	0	0	0	0	79	0	0	4	0	0	0	126
PHF	0.000	0.875	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.859	0.000	0.000	0.333	0.000	0.000	0.000	0.000	0.926



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West SOUTH LOVES DRIVE/W				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
16:30	0	13	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	29
16:45	0	8	1	0	0	0	0	0	0	0	14	0	0	0	0	0	0	23
17:00	0	10	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	27
17:15	0	8	1	0	0	0	0	0	0	0	21	0	0	0	0	0	0	30
<b>Total</b>	<b>0</b>	<b>39</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>109</b>
Pk Hr																	4:30 PM	
Pk Vol	0	39	2	0	0	0	0	0	0	0	68	0	0	0	0	0	0	109
PHF	0.000	0.750	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.810	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.908

Intersection Statistics

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	7:45 AM	152	8:00 AM	42	0.905
MID	1:30 PM	126	1:45 PM	34	0.926
PM	4:30 PM	109	5:15 PM	30	0.908

Peak Hour Statistics by Approach

Per	Peak Hour	Vol	PHF									
AM	7:45 AM	59	0.670	7:45 AM	0	0.670	7:45 AM	90	0.776	7:30 AM	3	0.375
MID	1:30 PM	43	0.896	1:30 PM	0	0.896	1:30 PM	79	0.859	1:30 PM	4	0.333
PM	4:30 PM	41	0.788	4:30 PM	0	0.788	4:30 PM	68	0.810	4:30 PM	0	0.810

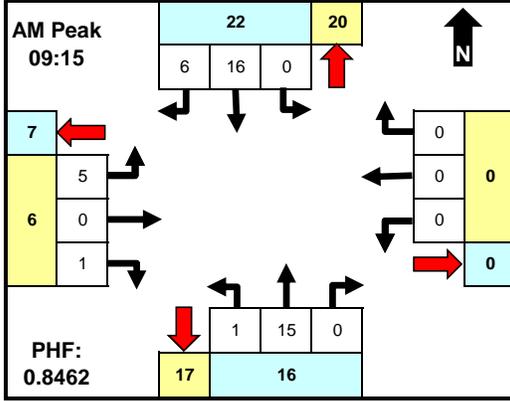
Comments

Approach & Departure Volumes (No Peds)

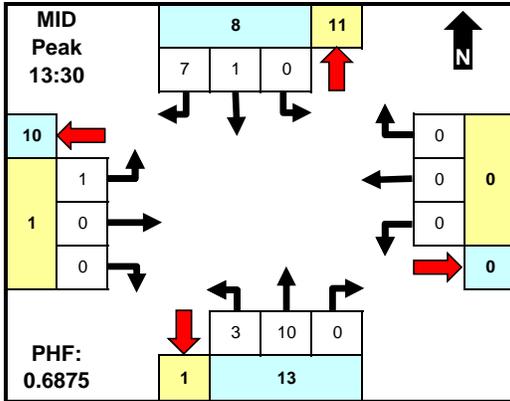
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	83	146	0	0	143	83	4	1
MID	43	83	0	0	79	42	4	1
PM	41	68	0	0	68	39	0	2



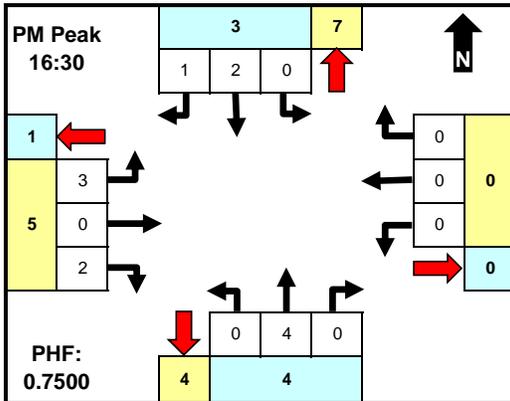
Intersection TMC: M500426  
Count Date: 9/1/2015



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West PIMA ST				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
6:45	0	4	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	7
7:00	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	6
7:15	0	5	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	10
7:30	0	0	1	0	0	0	0	0	0	2	0	0	3	0	0	0	6	
9:15	0	4	2	0	0	0	0	0	0	3	0	0	1	0	0	0	10	
9:30	0	3	3	0	0	0	0	0	0	3	0	0	3	0	1	0	13	
9:45	0	3	1	0	0	0	0	0	1	5	0	0	0	0	0	0	10	
10:00	0	6	0	0	0	0	0	0	0	4	0	0	1	0	0	0	11	
<b>Total</b>	<b>0</b>	<b>25</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>73</b>	
<b>Pk Hr</b> 9:15 AM																		
<b>Pk Vol</b>	<b>0</b>	<b>16</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>44</b>	
<b>PHF</b>	<b>0.000</b>	<b>0.667</b>	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.750</b>	<b>0.000</b>	<b>0.000</b>	<b>0.417</b>	<b>0.000</b>	<b>0.250</b>	<b>0.000</b>	<b>0.846</b>	



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West PIMA ST				TOTAL
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	
13:30	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	4
13:45	0	1	3	0	0	0	0	0	0	2	0	0	0	0	0	0	6
14:00	0	0	2	0	0	0	0	0	2	4	0	0	0	0	0	0	8
14:15	0	0	1	0	0	0	0	0	0	2	0	0	1	0	0	0	4
<b>Total</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>
<b>Pk Hr</b> 1:30 PM																	
<b>Pk Vol</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>
<b>PHF</b>	<b>0.000</b>	<b>0.250</b>	<b>0.583</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.375</b>	<b>0.625</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.688</b>



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West PIMA ST				TOTAL
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	
16:30	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
16:45	0	0	1	0	0	0	0	0	0	2	0	0	0	0	1	0	4
17:00	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	3
17:15	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
<b>Total</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>12</b>
<b>Pk Hr</b> 4:30 PM																	
<b>Pk Vol</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>12</b>
<b>PHF</b>	<b>0.000</b>	<b>0.250</b>	<b>0.250</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>	<b>0.750</b>	<b>0.000</b>	<b>0.500</b>	<b>0.000</b>	<b>0.750</b>

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	7:45 AM	44	8:00 AM	13	0.846
MID	1:30 PM	22	2:00 PM	8	0.688
PM	4:30 PM	12	4:45 PM	4	0.750

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	7:45 AM	22	0.917	7:45 AM	0	0.917	7:45 AM	16	0.667	7:15 AM	9	0.563
MID	1:30 PM	8	0.500	1:30 PM	0	0.500	1:30 PM	13	0.542	1:30 PM	1	0.250
PM	4:30 PM	3	0.375	4:30 PM	0	0.375	4:30 PM	4	0.500	4:30 PM	5	0.625

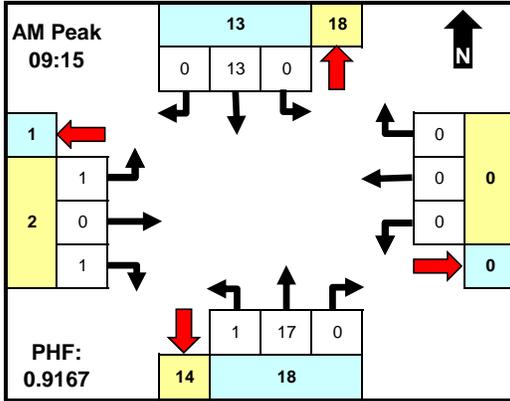
**Comments**

**Approach & Departure Volumes (No Peds)**

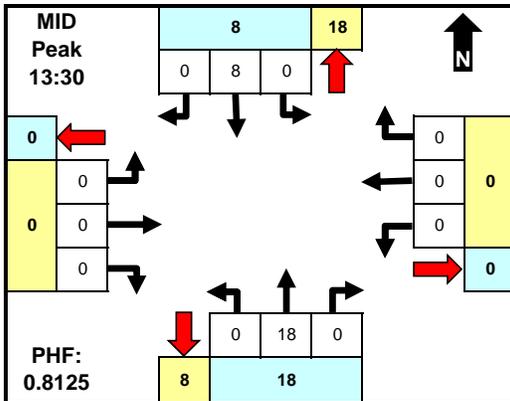
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	34	35	0	0	28	27	11	11
MID	8	11	0	0	13	1	1	10
PM	3	7	0	0	4	4	5	1



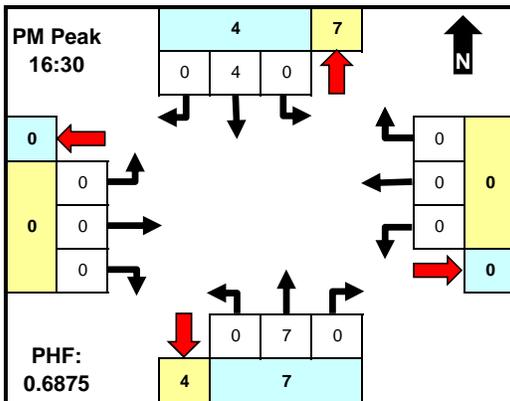
Intersection TMC: M500427  
Count Date: 9/1/2015



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West TRUCK STOP DRIVEWAY				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
6:45	0	4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	7
7:00	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
7:15	0	6	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	9
7:30	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
9:15	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
9:30	0	4	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	9
9:45	0	2	0	0	0	0	0	0	0	1	5	0	0	0	0	1	0	9
10:00	0	4	0	0	0	0	0	0	0	0	4	0	0	1	0	0	0	9
<b>Total</b>	<b>0</b>	<b>26</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>60</b>
<b>Pk Hr</b>																	<b>9:15 AM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>33</b>
<b>PHF</b>	<b>0.000</b>	<b>0.813</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.850</b>	<b>0.000</b>	<b>0.000</b>	<b>0.250</b>	<b>0.000</b>	<b>0.250</b>	<b>0.000</b>	<b>0.917</b>



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West TRUCK STOP DRIVEWAY				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
13:30	0	4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	7
13:45	0	2	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
14:00	0	1	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	8
14:15	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>
<b>Pk Hr</b>																	<b>1:30 PM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>
<b>PHF</b>	<b>0.000</b>	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.643</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.813</b>



Time	From North MILLER RD				From East NONE				From South MILLER RD				From West TRUCK STOP DRIVEWAY				TOTAL	
	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped	LT	Thru	RT	Ped		
16:30	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
16:45	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
17:00	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
<b>Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
<b>Pk Hr</b>																	<b>4:30 PM</b>	
<b>Pk Vol</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
<b>PHF</b>	<b>0.000</b>	<b>0.500</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.583</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.688</b>

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	7:45 AM	33	7:15 AM	9	0.917
MID	1:30 PM	26	2:00 PM	8	0.813
PM	4:30 PM	11	4:45 PM	4	0.688

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	7:15 AM	17	0.607	7:15 AM	0	0.607	7:45 AM	18	0.750	7:45 AM	2	0.500
MID	1:30 PM	8	0.500	1:30 PM	0	0.500	1:30 PM	18	0.643	1:30 PM	0	0.643
PM	4:30 PM	4	0.500	4:30 PM	0	0.500	4:30 PM	7	0.583	4:30 PM	0	0.583

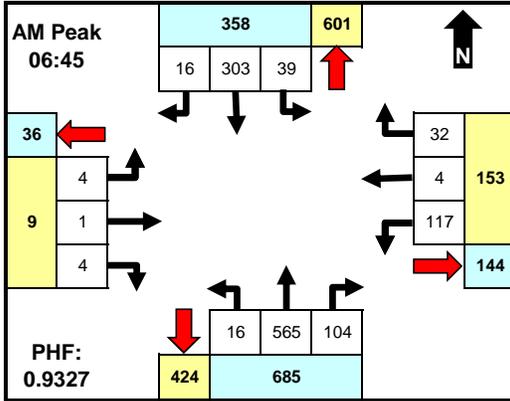
**Comments**

**Approach & Departure Volumes (No Peds)**

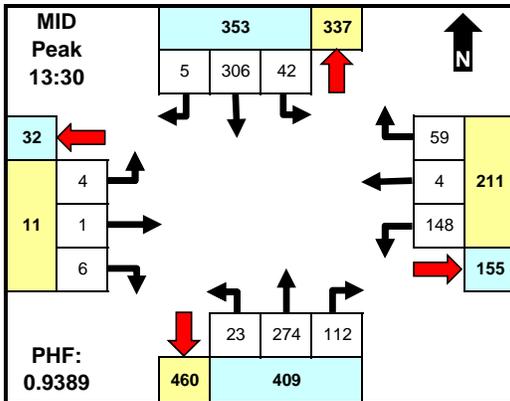
Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	27	31	0	0	31	27	2	2
MID	8	18	0	0	18	8	0	0
PM	4	7	0	0	7	4	0	0



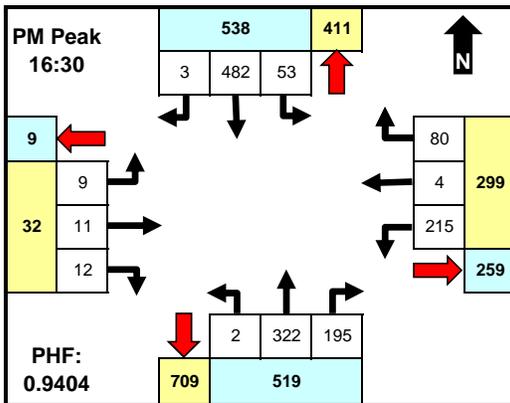
Intersection TMC: L500428  
Count Date: 9/1/2015



Time	From North MILLER RD				From East DURANGO ST				From South MILLER RD				From West DURANGO ST				TOTAL
	LT	Thru	RT	Ped													
6:45	10	83	3	0	19	1	9	0	4	124	19	0	2	0	1	0	275
7:00	6	71	1	0	23	1	5	0	4	163	23	0	0	0	1	0	298
7:15	12	82	7	0	34	2	8	0	5	142	30	0	1	0	0	0	323
7:30	11	67	5	0	41	0	10	0	3	136	32	0	1	1	2	0	309
9:15	12	39	1	0	24	1	7	0	1	64	27	0	2	1	1	0	180
9:30	13	49	0	0	20	1	12	0	4	82	37	0	2	3	1	0	224
9:45	11	47	1	0	26	1	13	0	3	73	38	0	0	0	2	0	215
10:00	12	50	0	0	24	2	7	0	3	74	42	0	0	0	5	0	221
<b>Total</b>	<b>87</b>	<b>488</b>	<b>18</b>	<b>0</b>	<b>211</b>	<b>9</b>	<b>71</b>	<b>0</b>	<b>27</b>	<b>858</b>	<b>248</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>13</b>	<b>0</b>	<b>2045</b>
<b>Pk Hr</b>																<b>6:45 AM</b>	
<b>Pk Vol</b>	<b>39</b>	<b>303</b>	<b>16</b>	<b>0</b>	<b>117</b>	<b>4</b>	<b>32</b>	<b>0</b>	<b>16</b>	<b>565</b>	<b>104</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>1205</b>
<b>PHF</b>	<b>0.813</b>	<b>0.913</b>	<b>0.571</b>	<b>0.000</b>	<b>0.713</b>	<b>0.500</b>	<b>0.800</b>	<b>0.000</b>	<b>0.800</b>	<b>0.867</b>	<b>0.813</b>	<b>0.000</b>	<b>0.500</b>	<b>0.250</b>	<b>0.500</b>	<b>0.000</b>	<b>0.933</b>



Time	From North MILLER RD				From East DURANGO ST				From South MILLER RD				From West DURANGO ST				TOTAL
	LT	Thru	RT	Ped													
13:30	11	67	1	0	32	0	9	0	4	64	28	0	1	1	1	0	219
13:45	9	79	3	0	36	3	19	0	7	66	24	0	0	0	1	0	247
14:00	11	74	1	0	39	1	13	0	6	76	32	0	1	0	2	0	256
14:15	11	86	0	0	41	0	18	0	6	68	28	0	2	0	2	0	262
<b>Total</b>	<b>42</b>	<b>306</b>	<b>5</b>	<b>0</b>	<b>148</b>	<b>4</b>	<b>59</b>	<b>0</b>	<b>23</b>	<b>274</b>	<b>112</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>984</b>
<b>Pk Hr</b>																<b>1:30 PM</b>	
<b>Pk Vol</b>	<b>42</b>	<b>306</b>	<b>5</b>	<b>0</b>	<b>148</b>	<b>4</b>	<b>59</b>	<b>0</b>	<b>23</b>	<b>274</b>	<b>112</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>984</b>
<b>PHF</b>	<b>0.955</b>	<b>0.890</b>	<b>0.417</b>	<b>0.000</b>	<b>0.902</b>	<b>0.333</b>	<b>0.776</b>	<b>0.000</b>	<b>0.821</b>	<b>0.901</b>	<b>0.875</b>	<b>0.000</b>	<b>0.500</b>	<b>0.250</b>	<b>0.750</b>	<b>0.000</b>	<b>0.939</b>



Time	From North MILLER RD				From East DURANGO ST				From South MILLER RD				From West DURANGO ST				TOTAL
	LT	Thru	RT	Ped													
16:30	15	136	0	0	42	3	22	0	1	86	60	0	1	2	1	0	369
16:45	15	115	1	0	47	0	19	0	0	74	50	0	5	5	5	0	336
17:00	14	107	1	0	63	1	21	0	1	82	43	0	3	3	3	0	342
17:15	9	124	1	0	63	0	18	0	0	80	42	0	0	1	3	0	341
<b>Total</b>	<b>53</b>	<b>482</b>	<b>3</b>	<b>0</b>	<b>215</b>	<b>4</b>	<b>80</b>	<b>0</b>	<b>2</b>	<b>322</b>	<b>195</b>	<b>0</b>	<b>9</b>	<b>11</b>	<b>12</b>	<b>0</b>	<b>1388</b>
<b>Pk Hr</b>																<b>4:30 PM</b>	
<b>Pk Vol</b>	<b>53</b>	<b>482</b>	<b>3</b>	<b>0</b>	<b>215</b>	<b>4</b>	<b>80</b>	<b>0</b>	<b>2</b>	<b>322</b>	<b>195</b>	<b>0</b>	<b>9</b>	<b>11</b>	<b>12</b>	<b>0</b>	<b>1388</b>
<b>PHF</b>	<b>0.883</b>	<b>0.886</b>	<b>0.750</b>	<b>0.000</b>	<b>0.853</b>	<b>0.333</b>	<b>0.909</b>	<b>0.000</b>	<b>0.500</b>	<b>0.936</b>	<b>0.813</b>	<b>0.000</b>	<b>0.450</b>	<b>0.550</b>	<b>0.600</b>	<b>0.000</b>	<b>0.940</b>

**Intersection Statistics**

Per	Peak Hour	Pk Hr Vol	Peak Intvl	Pk Intvl Vol	PHF
AM	6:45 AM	1205	7:15 AM	323	0.933
MID	1:30 PM	984	2:15 PM	262	0.939
PM	4:30 PM	1388	4:30 PM	369	0.940

**Peak Hour Statistics by Approach**

Per	Peak Hour	Vol	PHF									
AM	6:45 AM	358	0.886	7:15 AM	160	0.784	6:45 AM	685	0.901	7:45 AM	19	0.679
MID	1:30 PM	353	0.910	1:30 PM	211	0.894	1:30 PM	409	0.897	1:30 PM	11	0.688
PM	4:30 PM	538	0.891	4:30 PM	299	0.879	4:30 PM	519	0.883	4:30 PM	32	0.533

**Comments**

**Approach & Departure Volumes (No Peds)**

Per	Approach	Depart	Approach	Depart	Approach	Depart	Approach	Depart
AM	593	937	291	342	1133	712	28	54
MID	353	337	211	155	409	460	11	32
PM	538	411	299	259	519	709	32	9

## **APPENDIX B**

### **EXISTING QUEUEING OBSERVATION**

**Miller Rd. & I-10 WB Ramps - Existing Volumes @ 4xTruck volumes**

SimTraffic Analysis

Study Hours	Peak Queue Time	Movement	# of Vehicels	# of Trucks	EQ Veh	Total Queue	Synchro (veh)	Max Queue (ft)	95th Queue (ft)
6:45 AM - 7:45 AM	7:05 AM	WBLT	11	0	11	275'	18.2	333	222
9:15 AM - 10:15 AM	9:35AM	WBLT	0	2	6	150'	36.7	548	425
1:30 PM - 2:30 PM	1:30AM	WBLT	10	3	19	475'	41.1	1399	1444
	2:05PM	WBLT	10	3	19	475'			
4:30 PM - 5:30 PM	4:55PM	WBLT	13	3	22	550'	48.3	1565	1679
6:45 AM - 7:45 AM	7:30AM	NBLT	1	3	10	250'	0.6	49	23
9:15 AM - 10:15 AM	9:35AM	NBLT	0	2	6	150'	1.2	88	66
1:30 PM - 2:30 PM	1:45PM	NBLT	0	3	9	255'	1.2	67	53
4:30 PM - 5:30 PM	5:10PM	NBLT	1	2	7	175'	0.9	67	44

**Miller Rd. & I-10 EB Ramps - Existing Volumes @ 4xTruck volumes**

SimTraffic Analysis

Study Hours	Peak Queue Time	Movement	# of Vehicels	# of Trucks	Eq Veh	Total Queue		Max Queue (ft)	95th Queue (ft)
6:45 AM - 7:45 AM	7:10AM	NBRT	6	1	9	225'	-	77	35
	7:25AM	NBRT	3	2	9	225'	-	55	29
9:15 AM - 10:15 AM	9:25AM	NBRT	4	2	10	250'	-	55	22
1:30 PM - 2:30 PM	2:00PM	NBRT	1	2	7	175'	-	-	-
4:30 PM - 5:30 PM	4:45PM-4:50PM	NBRT	3	1	6	150'	-	128	51
6:45 AM - 7:45 AM	7:10AM	EBRT	2	2	8	200'	1.8	235	151
9:15 AM - 10:15 AM	9:25AM	EBRT	1	2	7	175'	2.3	224	178
1:30 PM - 2:30 PM	1:40PM	EBRT	0	3	9	225'	1.9	113	87
4:30 PM - 5:30 PM	4:35PM	EBRT	4	2	10	250'	5.5	252	189

## **APPENDIX C**

### **FIVE YEAR CRASH DATA**

IncidentID	IncidentDate	IncidentDate Time	IncidentDayOfWeek	OfficerNcic	ExtendedNcic	DamageOverLimitFlag	InvestigatedAtSceneFlag	CollisionManner	LightCondition	FirstHarmfulEvent	FirstHarmfulLocation	TotalUnits	TotalMotorists	TotalNonMotorists	TotalInjuries	TotalFatalities	TotalMotoristsInjuries	TotalNonMotoristsInjuries	TotalMotoristsFatalities	TotalNonMotoristsFatalities	InjurySeverity	MedicalTransportFlag	FatalAccidentFlag	TowAwayFlag	NscReportable	SchoolBusRelatedFlag	WorkZoneRelatedFlag	WorkersPresentFlag	HazardousFlag	HitAndRunFlag	Onroad	Offset	MPNum	TrafficWayType	IntersectionType	JunctionRelation	Weather
2379542	1/29/2010	9:58 AM	6	703	703	0	1	1	1	49	2	1	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	-1	0	0	Interstate 10 Exit 114 J-Ramp	-0.0189	115	1	0	13	1
2385019	2/28/2010	1:48 PM	1	799	703	1	1	6	1	16	1	2	2	0	1	0	1	0	0	0	2	1	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.0038	115	99	1	12	1
2516204	7/31/2011	2:59 PM	1	799	703	1	-1	6	1	16	255	2	6	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 A-Ramp	0.23	115	4	4	12	1
2642728	8/30/2012	4:20 PM	5	799	703	1	-1	4	1	16	255	2	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 A-Ramp	0.23	115	1	255	13	1
2646053	9/6/2012	3:21 PM	5	703	703	1	-1	4	1	16	255	2	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.11	115	99	4	13	1
2661265	10/23/2012	5:41 PM	3	703	703	1	-1	4	1	16	255	2	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0	0	1	1	13	1
2720181	5/3/2013	3:50 AM	6	799	703	1	-1	1	5	37	255	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	1	Interstate 10 Exit 114 G-Ramp	0.12	115	1	255	13	1
2721674	4/14/2013	9:40 AM	1	799	703	1	-1	4	1	16	255	2	3	0	1	0	1	0	0	0	2	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 A-Ramp	0.23	115	1	2	13	1
2743127	7/22/2013	6:21 AM	2	799	703	1	-1	4	1	16	255	2	4	0	0	0	0	0	0	0	1	0	0	1	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.09	115	1	0	0	1
2758147	9/20/2013	7:50 AM	6	799	703	1	-1	4	1	16	255	2	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.07	115	5	2	13	1
2770031	8/14/2013	4:12 PM	4	799	703	1	-1	4	1	16	255	2	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.1	115	1	1	13	1
2812341	2/28/2014	4:35 PM	6	799	703	1	-1	4	1	16	255	2	5	0	0	0	0	0	0	0	1	0	0	1	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.06	115	1	2	13	2
2820157	3/23/2014	6:01 PM	1	799	703	1	-1	4	1	25	255	2	2	0	1	0	1	0	0	0	3	0	0	1	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.09	115	1	99	13	1
2852755	7/14/2014	8:23 AM	2	799	703	0	1	4	1	16	255	2	6	0	0	0	0	0	0	0	1	-1	0	0	2	0	0	-1	0	0	Interstate 10 Exit 114 A-Ramp	0.24	115	1	4	2	1
2854553	7/21/2014	12:09 PM	2	799	703	1	1	4	1	16	255	2	3	0	0	0	0	0	0	0	1	-1	0	0	1	0	0	-1	0	0	Interstate 10 Exit 114 C-Ramp	0.09	115	5	1	3	1
2860266	6/22/2014	9:16 PM	1	799	703	1	-1	6	5	16	255	2	3	0	1	0	1	0	0	0	2	0	0	1	1	0	0	-1	0	0	Interstate 10 Exit 114 J-Ramp	0.18	115	1	1	13	1
2909454	12/26/2014	5:00 PM	6	799	703	0	0	6	1	16	255	2	5	0	0	0	0	0	0	0	1	-1	0	0	2	0	0	-1	0	0	Interstate 10 Exit 114 G-Ramp	0.1	115	1	255	3	1



O	IncidentID	UnitID	UnitNumber	PersonID	PersonNumber	PersonType	ZipCode	Age	Sex	SeatPosition	SafetyDevice	Airbag	InjuryStatus	Ejection	Extraction	NonMotoristLocation	AlcoholUseFlag	BACResult	TestTypeA	DrugUseFlag	DrugType	TestTypeD	TransportSource
1	2379542	4422993	1	6597434	1	1	85326	109	M	11	3	1	1	1	0	0	-1	-1	-1	-1	-1	-1	-1
1	2385019	4436140	1	6613482	1	1	850222858	29	M	11	3	1	1	1	0	0	-1	-1	-1	-1	-1	-1	-1
1	2385019	4433413	2	6614269	1	1	85326	22	M	11	3	1	2	1	0	0	-1	-1	-1	-1	-1	-1	1
1	2516204	4764879	1	7085094	1	1		43	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2516204	4764879	1	7086355	2	4		42	F	13	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2516204	4763912	2	7085859	1	1		28	F	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2516204	4763912	2	7085212	2	4		16	F	13	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2516204	4763912	2	7085302	3	4		13	F	21	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2516204	4763912	2	7085832	4	4		0	M	23	4	99	1	1	0	255	-1	-1	-1	-1	-1	-1	-1
1	2642728	5003632	1	7424173	1	1		29	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2642728	5003599	2	7423895	1	1		32	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2646053	5011704	1	7434690	1	1		53	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2646053	5011411	2	7435210	1	1		24	M	11	3	99	1	1	0	255	-1	-1	-1	-1	-1	-1	-1
1	2661265	5034730	1	7469372	1	1		26	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2661265	5035654	2	7467843	1	1		67	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2720181	5150934	1	7630557	1	1		24	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2721674	5154921	1	7636040	1	1		25	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2721674	5154921	1	7636873	2	4		29	M	13	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2721674	5154792	2	7637136	1	1		64	F	11	3	99	2	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2743127	5196826	1	7695219	1	1		21	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2743127	5196405	2	7694987	1	1		23	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2743127	5196405	2	7695681	2	4		24	M	13	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2743127	5196405	2	7695000	3	4		37	M	21	0	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2758147	5226054	1	7736955	1	1		31	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2758147	5226434	2	7736948	1	1		32	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2770031	5248212	1	7767853	1	1		30	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2770031	5248516	2	7768300	1	1		34	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2770031	5248516	2	7767929	2	4		34	F	13	3	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2812341	4179744	1	7878936	1	1		35	F	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2812341	2602956	2	7879165	1	1		29	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2812341	2602956	2	7879391	2	4		35	F	21	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2812341	2602956	2	7878712	3	4		52	F	23	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2812341	2602956	2	7879154	4	4		49	M	33	3	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2820157	2405244	1	7901669	1	1		52	F	11	3	99	3	255	255	255	-1	-1	-1	-1	-1	-1	0
1	2820157	5052203	2	7901045	1	1		27	F	11	99	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2852755	1718508	1	7989713	1	1	850272574	44	M	255	3	99	1	0	0	0	-1	-1	-1	-1	-1	-1	-1
1	2852755	1718508	1	7989288	2	4	850272545	19	F	13	3	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2852755	1718508	1	7989714	3	4	85027	5	F	21	2	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2852755	1718508	1	7989715	4	4	85027	14	F	23	2	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2852755	4194115	2	7989289	1	1	853967194	19	F	255	3	99	1	0	0	0	-1	-1	-1	-1	-1	-1	-1
1	2852755	4194115	2	7989716	2	4	982379252	48	F	13	3	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2854553	1525025	1	7994852	1	1	104510000	54	M	255	2	99	1	1	0	0	-1	-1	-1	-1	-1	-1	-1
1	2854553	1525025	1	7994248	2	4	85251	70	F	13	2	99	1	1	0	255	-1	-1	-1	-1	-1	-1	-1
1	2854553	4194737	2	7994041	1	1	850188145	43	F	255	2	99	1	1	0	0	-1	-1	-1	-1	-1	-1	-1
1	2860266	4196719	1	8008988	1	1		33	M	11	3	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2860266	4196719	1	8008777	2	4		0	M	33	4	99	1	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2860266	3702103	2	8008915	1	1		46	M	11	3	99	2	255	255	255	-1	-1	-1	-1	-1	-1	-1
1	2909454	5416042	1	8124296	1	1	90302	44	M	255	3	99	1	0	0	0	-1	-1	-1	-1	-1	-1	-1
1	2909454	5416042	1	8124297	2	4	90302	3	F	21	4	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2909454	5416042	1	8123188	3	4	90302	5	M	23	4	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2909454	5416042	1	8124298	4	4	90302	42	F	13	3	99	1	0	0	255	-1	-1	-1	-1	-1	-1	-1
1	2909454	5417093	2	8124299	1	1	90241	42	M	255	3	99	1	0	0	0	-1	-1	-1	-1	-1	-1	-1

## Extracting Data from the Master Workbooks

- 1) Start by saving a copy of this workbook so you can work with it.
  - 2) Then open up any of the annual crash data workbooks. (They are huge and require minutes to open. Do not be impatient.)
  - 3) The idea here is to pare down the listing as quickly as possible, so use filters to:
    - a) On the INCIDENT tab, select the desired Extended NCIC number(s) to narrow down the records to the desired jurisdiction.
    - b) Select the On-Road(s).
    - c) Highlight the selected records and copy them and paste them into the INCIDENT spreadsheet (next tab).
    - d) Clear the Incident numbers.
    - e) Go to UNIT tab, filter for "0's" in column A (these are the UNITS that correspond to the INCIDENTS just copied).
    - f) Highlight the selected records and copy them and paste them into the UNIT spreadsheet.
    - g) Go to PERSON tab, filter for "0's" in column A (these are the PERSONS involved in the INCIDENTS).
    - h) Highlight the selected records and copy them and paste them into the PERSON spreadsheet.
  - 4) Make sure that, in this workbook:
    - a) INCIDENTs, UNITS, and PERSONs are sorted from smallest to largest.
    - b) In UNIT and PERSON spreadsheets, copy A1 down the column
    - c) To check if all UNITS and PERSONs are accounted for, highlight Total Units (column AA) and columns AB+AC together and see if the SUMs in the status bar are equivalent to the number of rows+1 in the UNIT and PERSON spreadsheets.
  - 5) If all UNITS and PERSONs are accounted for, close and DO NOT SAVE the annual crash data workbook.
  - 6) Save this workbook and then refine the data further in any of many ways possible, using the filter feature.
- Perform this above procedure for each year & for each location. Although not efficient, it will do in a pinch.



IncidentID	CrossingFeature	Offset	OffsetMeasuredFlag	OffsetUnit	MPNum	MPOffset	CityId	CountyId	StateId	StateCode	CountryCode	Latitude	Longitude	ValidLocationFlag	LocationToolVersion	HESIntersectionFlag	IntersectionFlag	IntersectionRouteId	IntersectionATISCode	TrafficWayType	IntersectionType	JunctionRelation	Weather	PropertyDamageOw	PropertyDamageDes		
2342476	Interstate 10	-0.0947	0	1	0	0	25	13	3	AZ	US	33.43091009	-112.5909275	1		-1	1	207	I 010 1	2	0	0	1	-1	-1	3	0
2378300	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228402	-112.5909404	1		1	1	20863	07 YUMA RD	99	0	0	1	-1	-1	3	0
2396076	Interstate 10 Exit 114 J-Ramp	0	0	1	0	0	25	13	3	AZ	US	33.43426099	-112.5909262	1	40422	1	1	326	I 010114J	1	2	1	1	-1	-1	3	0
2396090	Interstate 10 Exit 114 A-Ramp	0.0047	0	1	0	0	25	13	3	AZ	US	33.43288672	-112.5909343	1	40422	1	1	322	I 010114A	2	0	0	1	-1	-1	0	1
2409386	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	99	1	1	1	-1	-1		
2414782	Yuma Rd	-0.0379	0	1	0	0	25	13	3	AZ	US	33.43173848	-112.5909269	1	40422	-1	1	20863	07 YUMA RD	4	0	0	1	-1	-1		
2486466	Yuma Rd	-0.0095	0	1	0	0	25	13	3	AZ	US	33.43215035	-112.5909346	1	40422	1	0	20863	07 YUMA RD	4	99	0	1	-1	-1		
2494714	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	2	1	11	1	-1	-1		
2514243	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	1	2	2	1	-1	-1		
2524362	Yuma Rd	-0.0097	0	1	0	0	25	13	3	AZ	US	33.4321476	-112.5909346	1	40422	1	1	20863	07 YUMA RD	2	1	12	1	-1	-1		
2566713	Interstate 10 Exit 114 A-Ramp	0	0	1	0	0	25	13	3	AZ	US	33.43281808	-112.5909347	1	40422	1	1	322	I 010114A	1	4	13	1	-1	-1		
2578986	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	4	1	1	4	-1	-1		
2595030	Yuma Rd	-0.0568	0	1	0	0	25	13	3	AZ	US	33.4314639	-112.5909217	1	40422	-1	0	20863	07 YUMA RD	4	99	0	1	-1	-1		
2599591	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	0	20863	07 YUMA RD	2	99	0	1	-1	-1		
2613102	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	2	4	11	1	-1	-1		
2613430	Yuma Rd	-0.0758	0	1	0	0	25	13	3	AZ	US	33.43118853	-112.5909197	1	40422	-1	1	20863	07 YUMA RD	2	0	0	1	-1	-1		
2619450	Yuma Rd	0	0	1	0	0	25	13	3	AZ	US	33.43228764	-112.5909372	1	40422	1	1	20863	07 YUMA RD	2	2	1	1	-1	-1		
2678175	Interstate 10 Exit 114 A-Ramp	-0.0095	0	1	0	0	25	13	3	AZ	US	33.43268079	-112.5909354	1	40422	-1	1	322		2	0	0	1	-1	-1		
2722560	Pima St	0.0284	0	1	0	0	25	13	3	AZ	US	33.43050166	-112.590919	1	40787	1	0	18206	07 PIMA ST	2	99	0	1	-1	-1		
2769392	Interstate 10 Exit 114 C-Ramp	0	0	1	0	0	25	13	3	AZ	US	33.43426099	-112.5909262	1	40787	1	1	323	I 010114C	2	4	11	1	-1	-1		
2872350	Pima St	0.0568	0	1	0	0	25	13	3	AZ	US	33.4309137	-112.5909195	1	41548	-1	1	18206		4	0	0	1	-1	-1		
2913731	Interstate 10 Exit 114 A-Ramp	0	0	1	0	0	25	13	3	AZ	US	33.43281808	-112.5909347	1	41548	1	1	322	I 010114A	1	2	3	1	-1	-1		







## Traffic Incident Report Key

<u>Item</u>	<u>Columns</u>	<u>Description</u> (* refer to Abridged Definitions Tables for code meanings)
Incident	1-7	Unique Number assigned to the incident, used as a primary reference.
<u>Location Information</u>		
On-Street	8-24	Street or Route on which incident occurred
MP	25-27	Milepost reference marker
Offset	28-32	Distance from milepost reference marker
DR	33-34	\ Direction (P/M) [i.e., Plus = north/east) or Minus = south/west]
Distance	35-39	/ and Distance (in feet) Incident occurred from Intersecting Street
Intersect Street	40-58	Intersecting street
<u>Other General Information</u>		
NCIC	59-62	Identifies locale in which crash occurred
OFCR NCIC	63-66	Identifies agency of the investigating officer (0799=DPS)
YYMMDD	67-72	Date of crash
HH:MM	73-76	Time of crash (24-hour clock)
DW	77	Day of Week (Sunday = 1...Saturday = 7)
<u>Unit Information</u>		
Total	78-79	Total number of units (includes non-motorized vehicles)
SrfCond	80-85	<b>SurfaceCondition*</b> (Units 1, 2, etc.)
Algmt	86-91	<b>RoadAlignment*</b> (Units 1, 2, etc.)
Grade	92-95	<b>RoadGrade*</b> (Units 1, 2, etc.)
Dfcts	96-101	<b>Defect*</b> (Units 1, 2, etc.)
BStyle	102-107	<b>BodyStyle*</b> (units 1, 2, etc.)
TrDr	107-111	<b>TravelDirection*</b> (Units 1, 2, etc.)
Uact	112-115	<b>UnitAction</b>
<u>Person Information</u>		
Tot Mot	116-118	Total number of persons IN motor vehicles
Tot Non	119-121	Total number of persons NOT in motor vehicles
Typ	122-124	<b>PersonType*</b> (Persons 1, 2, etc.)
Injr	128-128	<b>InjuryStatus*</b> (Persons 1, 2, etc.)
Violtn	129-132	<b>Violation*</b> (Drivers 1, 2, etc.)
PhsCnd	133-138	<b>Physical*</b> [Condition] (Persons 1, 2, etc.)
NonLoc	139-141	<b>NonMotoristLocation*</b> (Persons 1, 2, etc.)
<u>Severity</u>		
Incidents		
PDO	142-144	Total number of Property Damage Only (PDO, or non-injury) crashes
Inj	145-147	Total number of non-fatal injury crashes
Fat	148-150	Total number of fatal crashes
Injuries		
Ttl	151-153	Total number of personal, non-fatal injuries
Mot	154-156	Total number of injuries of those in motorized vehicles
Non	157-159	Total number of injuries of those in NON-motorized vehicles
Fatalities		
Ttl	160-162	Total number of fatal injuries
Mot	163-165	Total number of fatalities of those in motorized vehicles
Non	166-168	Total number of fatalities of those in NON-motorized vehicles
<u>Additional General Information</u>		
HR	169	HitAndRunFlag. Was Incident hit & run? (Y/N)
LtCn	170-171	<b>LightCondition*</b>
WeCn	172-173	<b>Weather*</b> [Condition]
JctRel	174-176	<b>JunctionRelation*</b>
Trfcwy	177-178	<b>TrafficWayType*</b>
HECd	179-181	<b>First Harmful Event*</b>
MC	181-182	<b>CollisionManner*</b>

Abridged Definition Tables

Table	Code Desc	
SurfaceCondition	1 DRY	
	2 WET	
	3 SNOW	
	4 SLUSH	
	5 ICE_FROST	
	6 WATER_STANDING_MOVING	
	7 SAND	
	8 MUD_DIRT_GRAVEL	
	9 OIL	
	97 OTHER	
99 UNKNOWN		
RoadAlignment	1 STRAIGHT	
	2 CURVE_LEFT	
	3 CURVE_RIGHT	
	99 UNKNOWN	
	255 NR - NOT REPORTED	
RoadGrade	1 LEVEL	
	2 DOWNHILL	
	3 UPHILL	
	4 HILLCREST	
	5 SAG_BOTTOM	
	99 UNKNOWN	
Defect	0 NO_CONTRIBUTING_CIRCUMSTANCES	
	90 BRAKES	
	97 OTHER	
	99 UNKNOWN	
	200 STEERING	
	205 SUSPENSION	
	210 TIRES	
	215 WHEELS	
	220 LIGHTS_HEAD_SIGNAL_TAIL	
	225 WINDOWS_WINDSHIELD	
	230 MIRRORS	
	235 WIPERS	
	240 TRUCK_COUPLING_TRAILER_HITCH_SAFETY_CHAINS	
	245 POWER_TRAIN	
	250 TRUCK_COUPLING_TRAILER_HITCH_SAFETY_CHAINS	
	255 NOT_REPORTED	
	UnitType	1 DRIVER
		2 PEDESTRIAN
		3 PEDALCYCLIST
		4 DRIVERLESS
TravelDirection	1 1 - NORTH	
	2 2 - SOUTH	
	3 3 - EAST	
	4 4 - WEST	
	5 5 - NORTHWEST	
	6 6 - NORTHEAST	
	7 7 - SOUTHWEST	
	8 8 - SOUTHEAST	
	99 99 - UNKNOWN	
	UnitAction	1 GOING_STRAIGHT_AHEAD
2 SLOWING_IN_TRAFFICWAY		
3 STOPPED_IN_TRAFFICWAY		
4 MAKING_LEFT_TURN		
5 MAKING_RIGHT_TURN		
6 MAKING_U_TURN		
7 OVERTAKING_PASSING		
8 CHANGING_LANES		
9 NEGOTIATING_A_CURVE		
10 BACKING		
11 AVOIDING_VEHICLE_OBJECT_PEDESTRIAN		
12 ENTERING_PARKING_POSITION		
13 LEAVING_PARKING_POSITION		
14 PROPERLY_PARKED		
15 IMPROPERLY_PARKED		
16 DRIVERLESS_MOVING_VEHICLE		
17 CROSSING_ROAD		
18 WALKING_WITH_TRAFFIC		
19 WALKING_AGAINST_TRAFFIC		
20 STANDING		
21 LYING		
22 GETTING_ON_OR_OFF_VEHICLE		
23 WORKING_ON_OR_PUSHING_VEHICLE		
24 WORKING_ON_ROAD		
97 OTHER		
99 UNKNOWN		
PersonType		1 DRIVER
		2 PEDESTRIAN
		3 PEDALCYCLIST
		4 PASSENGER
	5 DRIVERLESS	
InjuryStatus	1 NO_INJURY	
	2 POSSIBLE_INJURY	
	3 NON_INCAPACITATING_INJURY	
	4 INCAPACITATING_INJURY	
	5 FATAL	
99 UNKNOWN		
Violation	1 NO_IMPROPER_ACTION	
	2 SPEED_TOO_FAST_FOR_CONDITIONS	
	3 EXCEEDED_LAWFUL_SPEED	
	4 FOLLOWED_TOO_CLOSELY	
	5 RAN_STOP_SIGN	
	6 DISREGARDED_TRAFFIC_SIGNAL	
	7 MADE_IMPROPER_TURN	
	8 DROVE_RODE_IN_OPPOSING_TRAFFIC_LANE	
	9 KNOWINGLY_OPERATED_WITH_FAULTY_MISSING_EQUIPMENT	
	10 REQUIRED_MOTORCYCLE_SAFETY_EQUIPMENT_NOT_USED	
	11 PASSED_IN_NO_PASSING_ZONE	
	12 UNSAFE_LANE_CHANGE	
	13 FAILED_TO_KEEP_IN_PROPER_LANE	
	14 DISREGARDED_PAVEMENT_MARKINGS	
	15 OTHER_UNSAFE_PASSING	
	16 INATTENTION_DISTRACTION	
	17 DID_NOT_USE_CROSSWALK	
	18 WALKED_ON_WRONG_SIDE_OF_ROAD	
	19 ELECTRONIC_COMMUNICATIONS_DEVICE	
	20 FAILED_TO_YIELD_RIGHT_OF_WAY	
97 OTHER		
99 UNKNOWN		
Physical	0 NO_APPARENT_INFLUENCE	
	1 ILLNESS	
	2 PHYSICAL_IMPAIRMENT	
	3 FELL_ASLEEP_FATIGUED	
	4 ALCOHOL	
	5 DRUGS	
	6 MEDICATIONS	
	7 NO_TEST_GIVEN	
	72 TEST_GIVEN	
	73 TEST_REFUSED	
	74 TESTING_UNKNOWN	
	97 OTHER	
	99 UNKNOWN	
	NonMotoristLocation	0 NON_APPLICABLE
1 MARKED_CROSSWALK_AT_INTERSECTION		
2 AT_INTERSECTION_BUT_NO_CROSSWALK		
3 NON_INTERSECTION_CROSSWALK		
4 DRIVEWAY_ACCESS_CROSSWALK		
5 SCHOOL_CROSSWALK		
6 IN_ROADWAY_NOT_IN_A_CROSSWALK_OR_INTERSECTION		
7 MEDIAN_BUT_NOT_ON_SHOULDER		
8 ISLAND		
9 SHOULDER		
10 SIDEWALK		
11 ROADSIDE		
12 OUTSIDE_TRAFFICWAY		
13 DEDICATED_BIKE_LANE		
14 SHARED_USE_PATH_OR_TRAILS		
15 INSIDE_BUILDING		
97 OTHER		
99 UNKNOWN		
LightCondition	255 NOT_REPORTED	
	1 DAYLIGHT	
	2 DAWN	
	3 DUSK	
	4 DARK_LIGHTED	
	5 DARK_NOT_LIGHTED	
	6 DARK_UNKNOWN_LIGHTING	
99 UNKNOWN		
Weather	1 CLEAR	
	2 CLOUDY	
	3 SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	
	4 RAIN	
	5 SNOW	
	6 SEVERE_CROSSWINDS	
	7 BLOWING_SAND_SOIL_DIRT	
	8 FOG_SMOG_SMOKE	
	9 BLOWING_SNOW	
	97 OTHER	
99 UNKNOWN		
JunctionRelation	0 NOT_JUNCTION_RELATED	
	1 INTERSECTION_NON_INTERCHANGE	
	2 INTERSECTION_RELATED_NON_INTERCHANGE	
	3 ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	
	4 RAILWAY_GRADE_CROSSING	
	5 CROSSOVER_RELATED	
	6 FRONTAGE_ROAD_NON_INTERCHANGE	
7 DRIVEWAY		
JunctionRelation (cont'd)	8 ALLEY_ACCESS_RELATED	
	9 UNKNOWN_NON_INTERCHANGE	
	10 THRU_ROADWAY	
	11 INTERSECTION_INTERCHANGE	
	12 INTERSECTION_RELATED_INTERCHANGE	
	13 ENTRANCE_EXIT_RAMP_INTERCHANGE	
	14 FRONTAGE_ROAD_INTERCHANGE	
	15 OTHER_PART_OF_INTERCHANGE	
	17 UNKNOWN_INTERCHANGE	
	18 UNKNOWN_JUNCTION	
	99 UNKNOWN	
	109 OTHER_NON_INTERCHANGE	
	TrafficWayType	1 ONE_WAY_TRAFFICWAY
2 TWO_WAY_NOT_DIVIDED		
3 TWO_WAY_NOT_DIVIDED_WITH_CONTINUOUS_LEFT_TURN_LANE		
4 TWO_WAY_DIVIDED_UNPROTECTED_PAINTED_4_FOOT_MEDIAN		
5 TWO_WAY_DIVIDED_POSITIVE_MEDIAN_BARRIER		
99 UNKNOWN		
First Harmful Event	1 OVERTURN_ROLLOVER	
	2 FIRE_EXPLOSION	
	3 IMMERSION	
	4 JACKKNIFE	
	5 CARGO_EQUIPMENT_LOSS_SHIFT	
	6 FELL_JUMPED_FROM_VEHICLE	
	7 THROWN_OR_FALLING_OBJECT	
	8 OTHER_NON_COLLISION	
	9 EQUIPMENT_FAILURE	
	10 SEPARATION_OF_UNITS	
	11 RAN_OFF_ROAD_RIGHT	
	12 RAN_OFF_ROAD_LEFT	
	13 CROSS_MEDIAN	
	14 CROSS_CENTERLINE	
	15 DOWNHILL_RUNAWAY	
	16 MOTOR_VEHICLE_IN_TRANSPORT	
	17 PEDESTRIAN	
	18 PEDALCYCLE	
	19 RAILWAY_VEHICLE_TRAIN_ENGINE	
	20 LIGHT_RAILWAY_RAILCAR_VEHICLE	
	21 ANIMAL_WILD_NON_GAME	
	22 ANIMAL_WILD_GAME	
	23 ANIMAL_PET	
	24 ANIMAL_LIVESTOCK	
	25 PARKED_MOTOR_VEHICLE	
	26 WORK_ZONE_MAINTENANCE_EQUIPMENT	
	27 STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	
	28 OTHER_NON_FIXED_OBJECT	
	29 IMPACT_ATTENUATOR_CRASH_CUSHION	
	30 BRIDGE_OVERHEAD_STRUCTURE	
31 BRIDGE_RAIL		
32 CULVERT		
33 CURB		
34 DITCH		
35 EMBANKMENT		
36 GUARDRAIL_FACE		
37 GUARDRAIL_END		
38 CONCRETE_TRAFFIC_BARRIER		
39 CABLE_TRAFFIC_BARRIER		
40 OTHER_TRAFFIC_BARRIER		
41 TREE_BUSH_STUMP_STANDING		
42 TRAFFIC_SIGN_SUPPORT		
43 TRAFFIC_SIGNAL_SUPPORT		
44 UTILITY_POLE_LIGHT_SUPPORT		
45 OTHER_POST_POLE_OR_SUPPORT		
46 FENCE		
47 MAILBOX		
48 BUILDING		
49 OTHER_FIXED_OBJECT		
99 UNKNOWN		
255 Not Reported		
CollisionManner	1 SINGLE_VEHICLE	
	2 ANGLE(front to side)(other than left turn)	
	3 LEFT_TURN	
	4 REAR_END	
	5 HEAD_ON	
	6 SIDESWIPE_SAME_DIRECTION	
	7 SIDESWIPE_OPPOSITE_DIRECTION	
	8 REAR_TO_SIDE	
	9 REAR_TO_REAR	
	97 OTHER	
99 UNKNOWN		

**<enter name here>**

South Leg

East Leg

North Leg

West Leg

## **APPENDIX D**

### **2015 ANALYSIS WORKSHEETS**

1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	5.2	3.1	0.2	0.0	0.0	3.7

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	26.6	5.6	0.0	7.0	29.2	0.4	4.4

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	10.0	3.6	0.0	0.9	0.6	0.2	0.8

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	15.4	5.3	3.0	0.2	0.0	0.0	0.3

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	17.0	7.5	0.2	0.0	0.0	0.8

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	25.9	6.8	7.2	1.1	2.9	1.9	4.8

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	6.2	4.4	2.8	0.1	0.1	0.1	0.4

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	33.9	31.0	2.9	31.2	22.3	4.4	5.4	1.3	0.7	13.4	1.3	0.9

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	5.3

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Total Network Performance

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Stop Del/Veh (s)	14.4
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	244	87
Average Queue (ft)	82	6
95th Queue (ft)	158	40
Link Distance (ft)	1502	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	SB
Directions Served	LTR	R	L
Maximum Queue (ft)	147	156	66
Average Queue (ft)	48	100	8
95th Queue (ft)	102	157	41
Link Distance (ft)	1233	148	
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		5	
Storage Bay Dist (ft)			100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB
Directions Served	LR	T
Maximum Queue (ft)	68	213
Average Queue (ft)	12	18
95th Queue (ft)	40	87
Link Distance (ft)	388	184
Upstream Blk Time (%)		1
Queuing Penalty (veh)		3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB
Directions Served	LR	L	T
Maximum Queue (ft)	22	78	96
Average Queue (ft)	11	9	3
95th Queue (ft)	28	43	33
Link Distance (ft)	210		184
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		70	
Storage Blk Time (%)		1	
Queuing Penalty (veh)		3	

Intersection: 5: Miller Road & South Drwy

Movement	EB
Directions Served	LR
Maximum Queue (ft)	78
Average Queue (ft)	38
95th Queue (ft)	62
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	79	133	68	125	126	128	221	68
Average Queue (ft)	28	76	10	39	31	42	53	16
95th Queue (ft)	67	131	44	89	88	90	133	49
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							1	
Queuing Penalty (veh)							1	

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	48	31
Average Queue (ft)	20	6
95th Queue (ft)	38	25
Link Distance (ft)	306	248
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	143	23	17	129	27	72	64	126	42	91	106	32
Average Queue (ft)	42	3	6	66	3	18	10	54	10	19	34	4
95th Queue (ft)	107	16	18	118	16	45	36	110	28	56	88	19
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)								0				0
Queuing Penalty (veh)								0				0

Network Summary

Network wide Queuing Penalty: 12
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	6.0	2.5	4.0	0.1	0.0	0.0	3.9

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	7.4	0.0	2.5	19.8	0.5	2.4

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	8.9	3.9	0.0	0.0	1.6	1.7	0.8

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	3.3	3.3	2.3	0.1	0.0	0.0	0.1

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	9.4	3.4	0.2	0.0	0.0	0.7

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	22.1	3.0	3.5	0.7	1.3	1.0	3.5

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	7.0	2.8	0.1	0.3	0.1	0.1	0.4

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	20.5	18.8	4.2	28.0	16.2	3.2	1.7	1.0	0.7	5.4	1.9	0.5

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	5.2

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Total Network Performance

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Stop Del/Veh (s) 10.9

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	195	77
Average Queue (ft)	82	8
95th Queue (ft)	134	41
Link Distance (ft)	1502	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	SB	SB
Directions Served	LTR	R	L	T
Maximum Queue (ft)	140	148	77	29
Average Queue (ft)	68	72	16	3
95th Queue (ft)	123	122	60	18
Link Distance (ft)	1233	148		474
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB
Directions Served	LR	T
Maximum Queue (ft)	31	88
Average Queue (ft)	4	6
95th Queue (ft)	22	39
Link Distance (ft)	388	184
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	59	31	76
Average Queue (ft)	15	5	13
95th Queue (ft)	42	24	61
Link Distance (ft)	210		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		70	75
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 5: Miller Road & South Drwy

Movement	EB
Directions Served	LR
Maximum Queue (ft)	132
Average Queue (ft)	38
95th Queue (ft)	86
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	126	107	31	88	72	93	155	135
Average Queue (ft)	53	48	5	22	12	20	41	26
95th Queue (ft)	122	107	23	58	46	66	101	81
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							0	0
Queuing Penalty (veh)							0	0

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	46	30
Average Queue (ft)	17	1
95th Queue (ft)	32	10
Link Distance (ft)	306	248
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	74	23	54	103	27	64	61	84	40	66	188	20
Average Queue (ft)	33	3	9	55	3	18	5	35	13	17	40	1
95th Queue (ft)	82	16	33	95	16	46	28	79	29	43	121	7
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)												1
Queuing Penalty (veh)												1

Network Summary

Network wide Queuing Penalty: 2
---------------------------------

1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	18.8	29.3	18.8	2.1	0.0	0.0	0.0	13.3

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	22.9	11.7	0.0	1.6	12.3	0.6	2.5

3: Miller Road & Yuma Road Performance by movement

Movement	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	4.7	1.3	0.0	1.4	1.8	0.8

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	14.5	2.4	3.9	0.1	0.0	0.0	0.4

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	12.5	6.3	0.2	0.3	0.0	0.0	0.8

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	34.4	3.8	5.9	1.2	2.3	1.0	4.9

7: Miller Road & Truck Drwy Performance by movement

Movement	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	4.0	0.6	0.4	0.1	0.0	0.5

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	25.1	0.0	4.7	23.5	25.9	3.6	6.8	1.7	1.0	5.5	1.9	2.4

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	6.3

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Total Network Performance

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Stop Del/Veh (s) 16.7

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	408	123
Average Queue (ft)	149	66
95th Queue (ft)	294	100
Link Distance (ft)	1502	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Intersection: 2: I-10 EB Off Ramp & Miller Road

Movement	EB	NB	SB	SB
Directions Served	LTR	R	L	T
Maximum Queue (ft)	194	107	77	29
Average Queue (ft)	64	55	21	4
95th Queue (ft)	128	92	64	20
Link Distance (ft)	1233	148		474
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	79	30
Average Queue (ft)	16	4
95th Queue (ft)	56	21
Link Distance (ft)	388	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	59	51	76
Average Queue (ft)	13	14	16
95th Queue (ft)	38	41	67
Link Distance (ft)	210		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		70	75
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

Intersection: 5: Miller Road & South Drwy

Movement	EB
Directions Served	LR
Maximum Queue (ft)	98
Average Queue (ft)	37
95th Queue (ft)	76
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	167	147	31	52	91	89	216	135
Average Queue (ft)	65	52	12	22	22	32	60	25
95th Queue (ft)	157	111	36	46	72	79	155	99
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							2	0
Queuing Penalty (veh)							1	0

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	22	27
Average Queue (ft)	15	1
95th Queue (ft)	27	9
Link Distance (ft)	306	248
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Durango Street & Miller Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	142	78	130	27	71	75	91	47	46	154	21
Average Queue (ft)	68	8	72	6	29	17	43	13	14	55	1
95th Queue (ft)	132	37	121	23	57	52	89	31	37	125	7
Link Distance (ft)				1278			414			248	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	235	330	150		150	135		215	275		100
Storage Blk Time (%)										1	
Queuing Penalty (veh)										0	

Network Summary

Network wide Queuing Penalty: 2
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	18.1	4.0	0.4	0.1	0.0	13.3

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	24.8	28.2	18.6	0.0	1.5	7.3	0.6	3.1

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	83.2	10.4	3.7	0.0	1.2	1.6	0.9

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	10.1	4.2	4.3	0.1	0.0	0.0	0.3

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	12.2	8.2	0.0	0.2	0.0	0.0	0.8

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	30.6	3.5	5.8	0.7	1.9	0.7	3.9

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	2.1	5.6	0.0	0.2	0.1	0.1	0.6

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	22.6	19.8	2.8	26.7	7.4	3.1	4.9	2.6	1.1	12.4	3.1	0.6

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	6.7

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Total Network Performance

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Stop Del/Veh (s) 16.6

**Intersection: 1: Miller Road & I-10 WB Off Ramp**

Movement	WB	NB
Directions Served	LTR	L
Maximum Queue (ft)	516	124
Average Queue (ft)	172	18
95th Queue (ft)	354	69
Link Distance (ft)	1502	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		140
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

**Intersection: 2: I-10 EB Off Ramp & Miller Road**

Movement	EB	NB	SB	SB
Directions Served	LTR	R	L	T
Maximum Queue (ft)	203	102	51	56
Average Queue (ft)	85	53	18	4
95th Queue (ft)	160	80	50	22
Link Distance (ft)	1233	148		474
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 3: Miller Road & Yuma Road**

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	79	31	58
Average Queue (ft)	10	1	9
95th Queue (ft)	47	11	39
Link Distance (ft)	388		148
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 4: Miller Road & North Drwy**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	46	55	76
Average Queue (ft)	15	10	8
95th Queue (ft)	36	38	47
Link Distance (ft)	210		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		70	75
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		0	0

**Intersection: 5: Miller Road & South Drwy**

Movement	EB
Directions Served	LR
Maximum Queue (ft)	70
Average Queue (ft)	37
95th Queue (ft)	60
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Intersection: 6: Miller Road & Pima Street**

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	148	144	65	70	101	92	204	79
Average Queue (ft)	67	50	11	22	16	22	66	21
95th Queue (ft)	147	112	38	53	57	61	138	69
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							1	
Queuing Penalty (veh)							1	

**Intersection: 7: Miller Road & Truck Drwy**

Movement	EB
Directions Served	LR
Maximum Queue (ft)	44
Average Queue (ft)	21
95th Queue (ft)	32
Link Distance (ft)	306
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Intersection: 8: Durango Street & Miller Road**

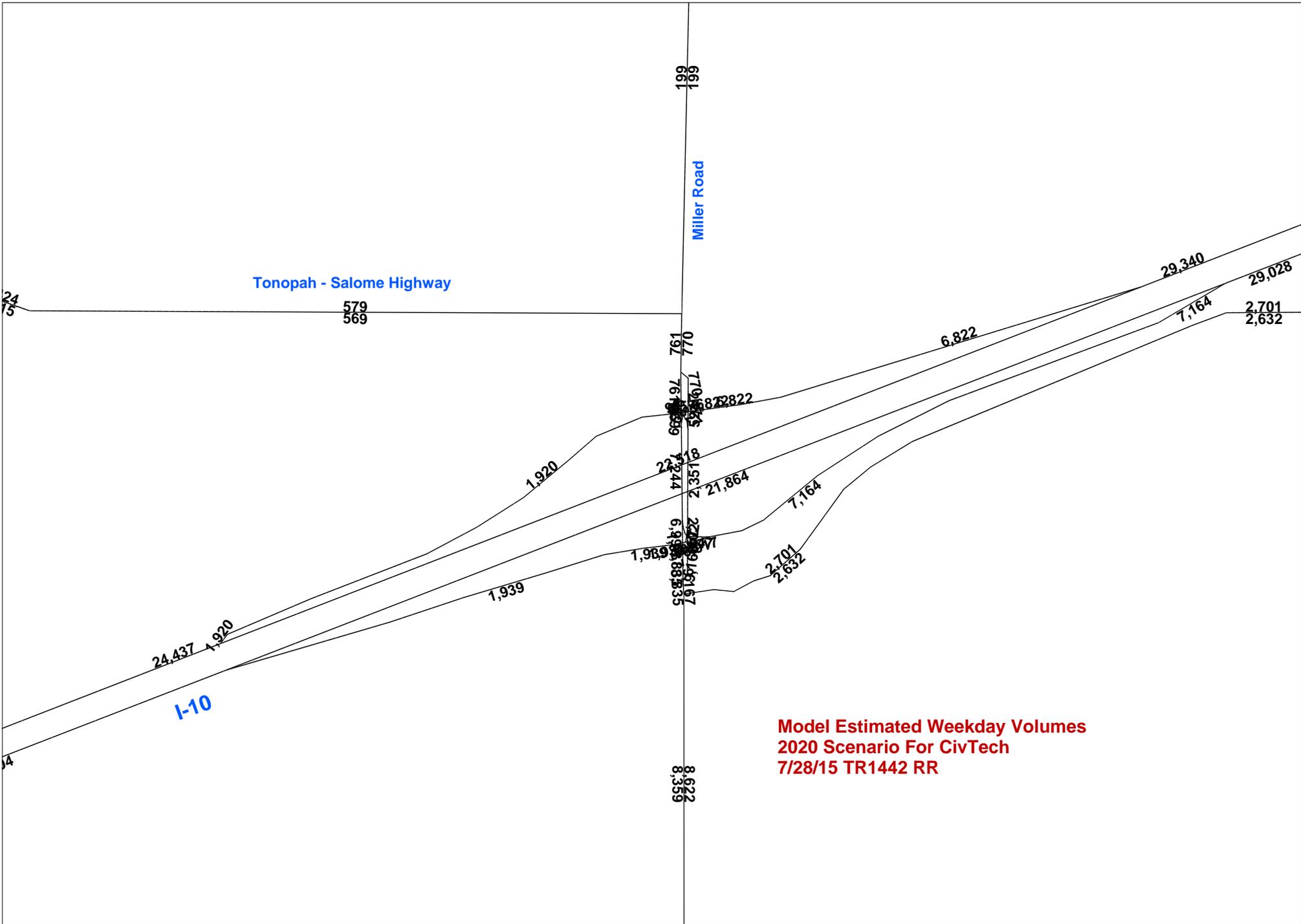
Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	84	59	53	172	27	75	24	111	47	72	204
Average Queue (ft)	22	7	5	93	2	30	3	50	21	30	79
95th Queue (ft)	69	31	23	148	13	64	15	95	44	67	160
Link Distance (ft)		637			1278			414			248
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	235		330	150		150	135		215	275	
Storage Blk Time (%)				2							3
Queuing Penalty (veh)				2							2

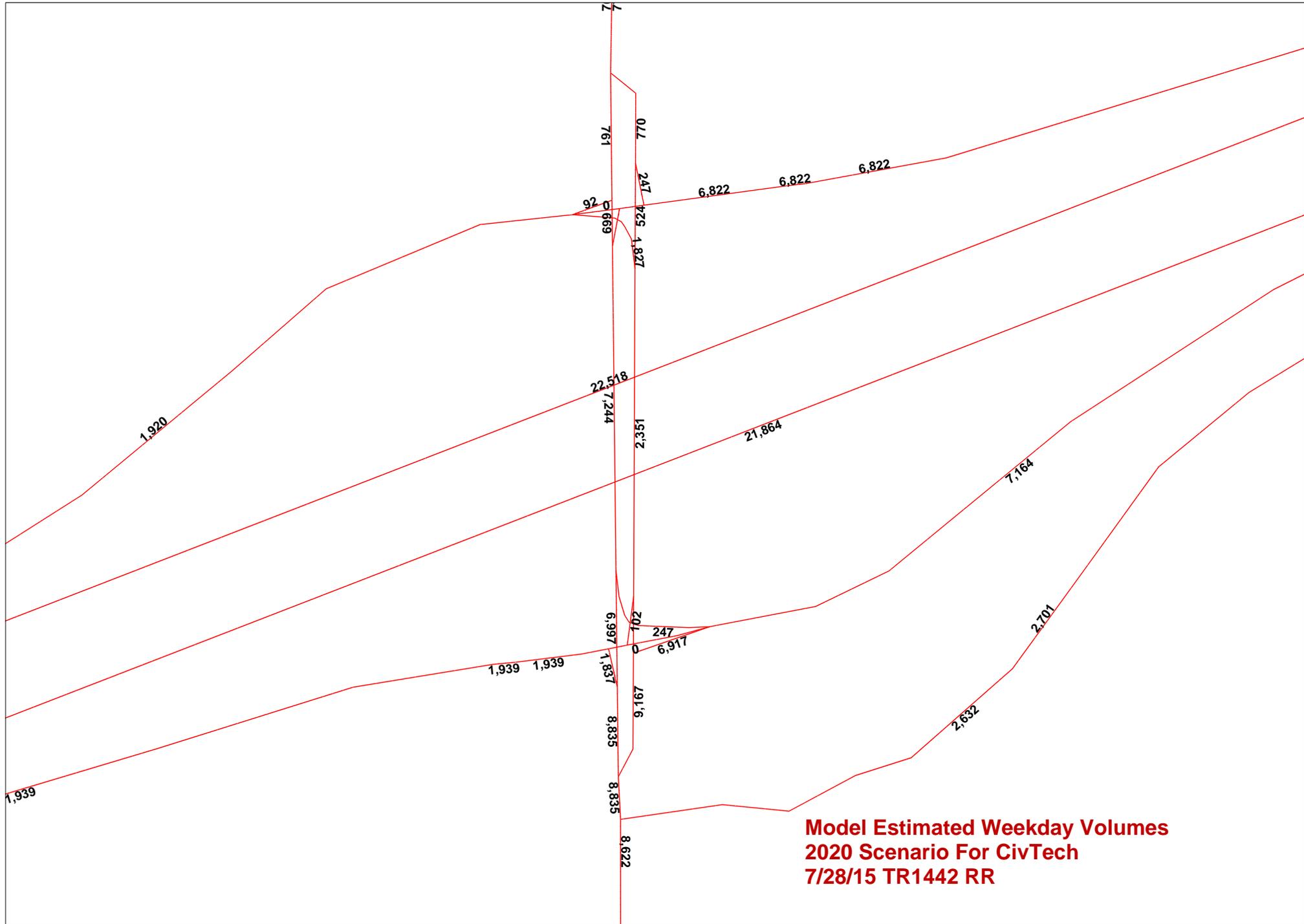
**Network Summary**

Network wide Queuing Penalty: 5
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## **APPENDIX E**

### **2020 MAG REGIONAL MODEL PROJECTIONS**





**Model Estimated Weekday Volumes  
2020 Scenario For CivTech  
7/28/15 TR1442 RR**

# **APPENDIX F**

## **2020 TURNING MOVEMENT VOLUMES**

**Location of counts:**

Source(s):

	Year	Volume	Avg Growth Rate	Expansion Factor
Beginning	2015	9,672		
MAG Model 2020	2020	18,002	13.2%	1.861
MAG Model 2035	2035	28,599	5.6%	2.957

	Year	Volume	Avg Growth Rate	Expansion Factor
MAG Model 2020	2020	18,002		
MAG Model 2035	2035	28,599	3.1%	1.589

Year	Growth Rate	Expansion Factor(s)
2016	-	1.000
2017	13.2%	1.132
2018	13.2%	1.282
2019	13.2%	1.452
2020	13.2%	1.644
2021	13.2%	1.861 <-expansion factor to 2020
2022	3.1%	1.920
2023	3.1%	1.980
2024	3.1%	2.042
2025	3.1%	2.106
2026	3.1%	2.172 <-expansion factor to 2025
2027	3.1%	2.240
2028	3.1%	2.310
2029	3.1%	2.382
2030	3.1%	2.457
2031	3.1%	2.534
2032	3.1%	2.614
2033	3.1%	2.695
2034	3.1%	2.780
2035	3.1%	2.867
2036	3.1%	2.957

## **APPENDIX G**

### **2020 NO-BUILD ANALYSIS WORKSHEETS**

1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	503.0	619.5	0.1	0.0	620.7	350.6

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)		2522.5	880.3	0.0	18.5	2703.7	107.2	121.7

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	1029.6	1160.3	0.0	19.2	0.5	28.9

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	40.1	18.9	2.7	21.5	0.0	0.0	16.3

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	305.0	250.1	43.8	0.0	0.0	42.8

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	344.5	115.5	23.6	101.5	3.5	1.8	117.5

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	140.8	43.8	2.8	57.4	0.3	0.1	43.6

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	51.8	30.3	5.6	33.0	11.1	27.3	36.6	62.3	15.0	32.1	4.6	2.7

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	38.5

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Total Network Performance

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Stop Del/Veh (s)	306.0
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	SB
Directions Served	LTR	L	TR
Maximum Queue (ft)	1517	64	636
Average Queue (ft)	1042	5	199
95th Queue (ft)	2014	30	554
Link Distance (ft)	1502		620
Upstream Blk Time (%)	60		4
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)		140	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	1274	56	187	125	474
Average Queue (ft)	872	2	157	105	328
95th Queue (ft)	1741	19	176	157	682
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)	61		14		62
Queuing Penalty (veh)	0		96		414
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				69	
Queuing Penalty (veh)				462	

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	334	245	236
Average Queue (ft)	138	30	195
95th Queue (ft)	315	131	206
Link Distance (ft)	388	184	184
Upstream Blk Time (%)		0	24
Queuing Penalty (veh)		2	158
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB
Directions Served	LR	L	T	T
Maximum Queue (ft)	48	144	287	227
Average Queue (ft)	12	8	142	203
95th Queue (ft)	34	53	284	223
Link Distance (ft)	210		184	184
Upstream Blk Time (%)			5	37
Queuing Penalty (veh)			29	238
Storage Bay Dist (ft)		70		
Storage Blk Time (%)			2	
Queuing Penalty (veh)			0	

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	226	383	338
Average Queue (ft)	98	295	292
95th Queue (ft)	194	412	312
Link Distance (ft)	224	273	273
Upstream Blk Time (%)	2	23	49
Queuing Penalty (veh)	0	148	314
Storage Bay Dist (ft)			
Storage Blk Time (%)		5	
Queuing Penalty (veh)		0	

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	515	526	355	275	404	385	194	68
Average Queue (ft)	426	452	65	136	369	357	50	11
95th Queue (ft)	596	612	288	342	402	376	145	48
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)	60	67			53	69		
Queuing Penalty (veh)	0	0			306	396		
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		85		0	46		1	
Queuing Penalty (veh)		10		0	56		1	

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	T
Maximum Queue (ft)	171	29	288	289	135
Average Queue (ft)	39	2	251	262	5
95th Queue (ft)	113	14	288	280	46
Link Distance (ft)	306	248	248	248	336
Upstream Blk Time (%)			15	32	
Queuing Penalty (veh)			59	126	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	144	45	45	193	27	144	209	466	290	119	260	175
Average Queue (ft)	49	5	10	100	3	55	60	434	189	29	70	14
95th Queue (ft)	125	22	29	170	16	106	214	456	411	82	187	72
Link Distance (ft)		637			1278			414			248	
Upstream Blk Time (%)								68			0	
Queuing Penalty (veh)								0			3	
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)				3		0		68			3	
Queuing Penalty (veh)				3		0		163			4	

Network Summary

Network wide Queuing Penalty: 2989
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	520.9	296.2	455.0	0.5	0.4	542.9	274.3

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	1725.4	1320.0	0.0	14.9	729.7	71.5	115.8

3: Miller Road & Yuma Road Performance by movement

Movement	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	7.3	0.0	8.8	1.1	0.0	7.0

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	232.0	79.4	0.8	5.4	0.0	0.0	6.3

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	39.7	22.9	0.0	4.1	0.0	0.0	5.1

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	27.8	2.4	2.8	2.6	3.3	2.0	7.1

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	15.8	2.6	0.2	0.3	0.1	0.0	0.5

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	25.8	12.0	2.8	26.6	17.0	6.5	6.9	3.2	1.1	27.9	3.5	4.2

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	8.1

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Total Network Performance

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Stop Del/Veh (s) 152.8

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	147	226	512
Average Queue (ft)	1186	23	8	208
95th Queue (ft)	2105	83	77	549
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	70			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	1296	148	170	123	490
Average Queue (ft)	1026	5	151	94	323
95th Queue (ft)	1730	51	172	161	669
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)	66	0	10		54
Queuing Penalty (veh)	0	0	47		271
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				70	0
Queuing Penalty (veh)				342	0

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	68	184	219
Average Queue (ft)	8	8	127
95th Queue (ft)	35	65	257
Link Distance (ft)	388	184	184
Upstream Blk Time (%)		0	10
Queuing Penalty (veh)		1	48
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	144	29	286	226	75
Average Queue (ft)	40	1	23	83	5
95th Queue (ft)	118	10	127	234	37
Link Distance (ft)	210		184	184	
Upstream Blk Time (%)			1	7	
Queuing Penalty (veh)			4	33	
Storage Bay Dist (ft)		70			75
Storage Blk Time (%)			1		0
Queuing Penalty (veh)			0		0

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	134	273	311
Average Queue (ft)	52	32	55
95th Queue (ft)	115	166	226
Link Distance (ft)	224	273	273
Upstream Blk Time (%)		0	2
Queuing Penalty (veh)		0	9
Storage Bay Dist (ft)			
Storage Blk Time (%)		1	
Queuing Penalty (veh)		0	

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	252	186	31	79	152	174	177	135
Average Queue (ft)	122	102	7	26	52	69	41	33
95th Queue (ft)	233	183	29	66	128	147	135	106
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							2	0
Queuing Penalty (veh)							2	1

Intersection: 7: Miller Road & Truck Drwy

Movement	EB
Directions Served	LR
Maximum Queue (ft)	48
Average Queue (ft)	18
95th Queue (ft)	38
Link Distance (ft)	306
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Miller Road & Durango Street

Movement	EB		WB		NB		SB	
	L	T	R	L	T	R	L	T
Directions Served	L	T	R	L	T	R	L	T
Maximum Queue (ft)	142	23	53	158	70	129	62	318
Average Queue (ft)	67	7	6	93	8	42	10	104
95th Queue (ft)	125	23	33	162	38	99	37	209
Link Distance (ft)	637		1278		414		248	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	235		330		150		215	
Storage Blk Time (%)			1				3	
Queuing Penalty (veh)			1				9	

Network Summary

Network wide Queuing Penalty: 770
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	546.4	461.1	542.8	8.7	0.0	0.0	0.0	268.6

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	13.8	0.0	5.8	45.5	0.8	4.9

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	69.9	6.3	1.1	0.7	2.3	0.0	1.4

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	20.4	30.8	1.5	0.3	0.0	0.0	0.5

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	11.8	10.6	1.4	0.2	0.0	0.0	0.6

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	28.1	3.2	6.9	1.5	3.3	1.2	5.4

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	18.5	4.0	4.7	0.3	0.1	0.1	0.4

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	29.0	9.9	5.2	26.7	8.8	6.0	13.8	5.6	1.8	32.2	5.1	1.2

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	10.7

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Total Network Performance

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Stop Del/Veh (s)	91.3
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB
Directions Served	LTR	L	T
Maximum Queue (ft)	1565	164	282
Average Queue (ft)	1553	114	45
95th Queue (ft)	1576	181	189
Link Distance (ft)	1502		474
Upstream Blk Time (%)	100		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		140	
Storage Blk Time (%)		5	0
Queuing Penalty (veh)		1	1

Intersection: 2: I-10 EB Off Ramp & Miller Road

Movement	EB	NB	SB	SB
Directions Served	LTR	R	L	T
Maximum Queue (ft)	263	158	84	106
Average Queue (ft)	109	100	20	6
95th Queue (ft)	212	160	68	40
Link Distance (ft)	1233	148		474
Upstream Blk Time (%)		2		
Queuing Penalty (veh)		7		
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB
Directions Served	LR	L	T
Maximum Queue (ft)	68	30	194
Average Queue (ft)	11	2	21
95th Queue (ft)	43	14	99
Link Distance (ft)	388		184
Upstream Blk Time (%)			1
Queuing Penalty (veh)			2
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	44	68	211	81
Average Queue (ft)	14	7	12	8
95th Queue (ft)	36	36	86	46
Link Distance (ft)	210		184	
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)		70		75
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		1		0

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	78	30
Average Queue (ft)	36	1
95th Queue (ft)	74	9
Link Distance (ft)	224	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		70
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	306	230	53	218	217	180	222	134
Average Queue (ft)	103	82	10	41	66	65	68	34
95th Queue (ft)	223	168	35	110	159	147	150	99
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)					0		3	0
Queuing Penalty (veh)					0		4	1

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	44	31
Average Queue (ft)	17	6
95th Queue (ft)	34	25
Link Distance (ft)	306	248
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Durango Street & Miller Road

Movement	EB			WB			NB			SB			
	L	T	R	L	T	R	L	T	R	L	T	R	
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R	
Maximum Queue (ft)	260	378	355	175	302	136	159	429	240	110	217	20	
Average Queue (ft)	104	28	20	140	70	42	32	137	50	32	77	1	
95th Queue (ft)	205	179	128	192	241	95	86	285	161	74	169	7	
Link Distance (ft)		637				1278				414			248
Upstream Blk Time (%)									1				
Queuing Penalty (veh)									0				
Storage Bay Dist (ft)	235			330		150		150	135		215	275	100
Storage Blk Time (%)	1	0		9	0		6	0		4			
Queuing Penalty (veh)	1	0		14	0		18	0		4			

Network Summary

Network wide Queuing Penalty: 55
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	411.7	454.6	0.9	0.0	1.9	248.2

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	987.0	1727.2	639.1	0.1	12.6	294.9	6.3	66.5

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	47.8	2.4	0.0	3.0	0.9	0.5	2.2

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	49.0	7.4	3.8	0.5	0.0	0.0	0.9

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	25.1	4.5	0.2	0.0	0.0	1.0

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	28.1	2.8	9.1	1.5	4.0	1.8	6.3

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	9.1	7.8	1.1	0.2	0.4	0.1	0.8

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	20.5	16.1	7.0	59.7	62.8	31.7	28.0	8.1	2.6	78.9	8.1	28.5

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	20.9

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Total Network Performance

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Stop Del/Veh (s) 127.4

**Intersection: 1: Miller Road & I-10 WB Off Ramp**

Movement	WB	NB	SB
Directions Served	LTR	L	TR
Maximum Queue (ft)	1565	112	75
Average Queue (ft)	1545	48	3
95th Queue (ft)	1577	98	23
Link Distance (ft)	1502		620
Upstream Blk Time (%)	100		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		140	
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 2: I-10 EB Off Ramp & Miller Road**

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	1285	188	181	122	474
Average Queue (ft)	941	7	145	50	62
95th Queue (ft)	1684	64	182	110	304
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)	60	0	6		5
Queuing Penalty (veh)	0	1	28		47
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				15	0
Queuing Penalty (veh)				146	0

**Intersection: 3: Miller Road & Yuma Road**

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	50	139	202	56
Average Queue (ft)	5	12	89	4
95th Queue (ft)	27	65	205	23
Link Distance (ft)	388	184	184	148
Upstream Blk Time (%)			3	
Queuing Penalty (veh)			13	
Storage Bay Dist (ft)				
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

**Intersection: 4: Miller Road & North Drwy**

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	65	31	174	76
Average Queue (ft)	17	11	23	5
95th Queue (ft)	44	34	105	38
Link Distance (ft)	210		184	
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)		70		75
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

**Intersection: 5: Miller Road & South Drwy**

Movement	EB
Directions Served	LR
Maximum Queue (ft)	81
Average Queue (ft)	37
95th Queue (ft)	70
Link Distance (ft)	224
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Intersection: 6: Miller Road & Pima Street**

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	344	266	68	131	132	195	248	135
Average Queue (ft)	122	110	17	48	30	56	103	31
95th Queue (ft)	241	209	46	94	96	135	213	97
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		0					4	0
Queuing Penalty (veh)		0					7	1

**Intersection: 7: Miller Road & Truck Drwy**

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	84	31	187
Average Queue (ft)	24	1	10
95th Queue (ft)	52	11	73
Link Distance (ft)	306	248	336
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 8: Durango Street & Miller Road**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	132	103	54	175	797	175	27	429	240	247	267	124
Average Queue (ft)	37	16	9	165	354	57	7	190	72	71	137	4
95th Queue (ft)	95	55	32	199	775	119	25	351	191	167	259	43
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)								2		0		1
Queuing Penalty (veh)								0		0		15
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)				42				11	0	0		14
Queuing Penalty (veh)				73				43	0	0		16

**Network Summary**

Network wide Queuing Penalty: 391
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## **APPENDIX H**

### **2020 ALL-WAY STOP ANALYSIS WORKSHEETS**

1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	22.0	21.6	6.2	5.3	4.2	18.4

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	4.5	4.0	5.9	3.7	16.5	14.1	25.0	17.2

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	1428.5	981.7	17.6	0.9	0.3	20.6

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	301.7	258.4	9.4	19.8	0.0	0.0	13.9

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	475.6	247.2	42.0	0.1	4.7	32.1

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	352.4	163.3	24.0	98.5	7.1	1.7	84.8

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	2.1	11.5	4.7	54.4	0.2	0.1	29.0

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	73.3	26.5	8.1	35.9	19.4	42.7	49.7	57.9	18.3	35.8	4.6	1.7

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	33.0

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Total Network Performance

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Stop Del/Veh (s) 150.6

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	704	175	79	90
Average Queue (ft)	228	65	13	27
95th Queue (ft)	443	124	48	71
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		1		
Queuing Penalty (veh)		0		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	206	101	170	174	402
Average Queue (ft)	76	56	157	56	210
95th Queue (ft)	140	99	166	181	380
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)			15		
Queuing Penalty (veh)			98		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)					56
Queuing Penalty (veh)					10

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	447	214	218
Average Queue (ft)	179	28	197
95th Queue (ft)	420	119	210
Link Distance (ft)	388	184	184
Upstream Blk Time (%)	2	0	22
Queuing Penalty (veh)	0	2	147
Storage Bay Dist (ft)			
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB
Directions Served	LR	L	T	T
Maximum Queue (ft)	151	50	239	244
Average Queue (ft)	53	9	123	208
95th Queue (ft)	133	33	260	230
Link Distance (ft)	210		184	184
Upstream Blk Time (%)			6	37
Queuing Penalty (veh)			40	243
Storage Bay Dist (ft)		70		
Storage Blk Time (%)			1	
Queuing Penalty (veh)			0	

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	239	366	320	153
Average Queue (ft)	117	301	293	8
95th Queue (ft)	252	420	313	60
Link Distance (ft)	224	273	273	184
Upstream Blk Time (%)	25	22	50	
Queuing Penalty (veh)	0	140	317	
Storage Bay Dist (ft)				
Storage Blk Time (%)		7		
Queuing Penalty (veh)		0		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	526	526	355	275	391	405	288	185
Average Queue (ft)	460	480	91	174	359	355	164	72
95th Queue (ft)	562	554	341	364	387	378	241	192
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)	64	72			47	70	1	
Queuing Penalty (veh)	0	0			267	400	8	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		97			52		15	
Queuing Penalty (veh)		11			62		19	

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	T
Maximum Queue (ft)	44	31	279	284	144
Average Queue (ft)	22	3	251	256	10
95th Queue (ft)	43	19	272	278	60
Link Distance (ft)	306	248	248	248	336
Upstream Blk Time (%)			12	26	
Queuing Penalty (veh)			44	101	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	154	44	20	222	259	212	209	466	290	247	265	175
Average Queue (ft)	58	4	8	126	5	58	49	431	210	60	113	16
95th Queue (ft)	130	21	20	208	23	141	188	443	416	161	256	89
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)								68		0	0	
Queuing Penalty (veh)								0		0	4	
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)				9		2		67		0	10	
Queuing Penalty (veh)				7		8		161		0	12	

Network Summary

Network wide Queuing Penalty: 2100
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	241.5	252.3	8.4	4.6	16.2	174.2

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	28.4	12.3	6.8	35.5	76.8	86.8	44.7

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	53.4	8.3	3.4	33.4	2.9	3.5	17.8

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	318.0	59.8	7.2	37.3	0.0	0.0	20.5

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	1800.7	2389.9	7.4	66.9	0.6	0.0	58.1

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	361.5	68.2	29.2	127.0	8.7	3.2	102.5

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	273.8	172.1	0.0	73.6	0.2	0.1	51.6

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	353.9	128.9	83.2	29.9	19.4	81.0	77.3	81.6	36.2	22.7	5.9	1.4

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	56.7

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Total Network Performance

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Stop Del/Veh (s) 247.4

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	161	79	157
Average Queue (ft)	1175	89	21	41
95th Queue (ft)	2077	143	64	105
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	63			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		1		
Queuing Penalty (veh)		0		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	243	198	180	124	488
Average Queue (ft)	121	107	164	83	460
95th Queue (ft)	196	181	176	172	542
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		3	39		15
Queuing Penalty (veh)		14	173		83
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				2	93
Queuing Penalty (veh)				8	30

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB	NB
Directions Served	LR	L	T	T
Maximum Queue (ft)	31	30	268	217
Average Queue (ft)	6	1	61	198
95th Queue (ft)	24	10	194	211
Link Distance (ft)	388		184	184
Upstream Blk Time (%)			2	46
Queuing Penalty (veh)			7	208
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			2	
Queuing Penalty (veh)			0	

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	223	31	292	244	54	76
Average Queue (ft)	46	3	180	205	2	5
95th Queue (ft)	141	19	321	230	18	37
Link Distance (ft)	210		184	184	184	
Upstream Blk Time (%)	5		14	59		
Queuing Penalty (veh)	0		63	262		
Storage Bay Dist (ft)		70				75
Storage Blk Time (%)			4			0
Queuing Penalty (veh)			1			0

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	239	408	327	190
Average Queue (ft)	194	315	290	24
95th Queue (ft)	295	384	308	115
Link Distance (ft)	224	273	273	184
Upstream Blk Time (%)	72	31	61	0
Queuing Penalty (veh)	0	130	251	1
Storage Bay Dist (ft)				
Storage Blk Time (%)		10		
Queuing Penalty (veh)		0		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	526	515	305	224	405	392	289	135
Average Queue (ft)	461	458	23	116	329	332	172	70
95th Queue (ft)	629	614	150	282	450	432	297	146
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)	66	69			50	66	3	
Queuing Penalty (veh)	0	0			185	245	14	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		82	0	0	49		14	0
Queuing Penalty (veh)		9	0	0	45		20	1

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	NB
Directions Served	LR	T	T
Maximum Queue (ft)	321	300	308
Average Queue (ft)	98	218	225
95th Queue (ft)	280	375	371
Link Distance (ft)	306	248	248
Upstream Blk Time (%)	14	32	40
Queuing Penalty (veh)	0	79	100
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	260	700	355	174	436	175	160	477	240	90	198	21
Average Queue (ft)	194	330	69	78	87	113	27	362	140	41	72	3
95th Queue (ft)	356	774	289	132	315	196	112	596	319	78	163	14
Link Distance (ft)		637			1278			414			248	
Upstream Blk Time (%)		9						61				
Queuing Penalty (veh)		0						0				
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)	59	13	0	2		16		66	0		6	
Queuing Penalty (veh)	22	8	0	2		34		205	1		6	

Network Summary

Network wide Queuing Penalty: 2207
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	325.9	409.9	365.4	19.3	3.3	8.1	3.5	209.7

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	6.6	7.2	4.9	9.6	9.1	11.5	9.1

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	39.5	11.0	1.6	1.7	1.0	1.0	1.5

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	28.5	9.5	3.5	0.2	0.0	0.0	0.5

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	23.9	18.1	0.0	0.2	0.0	0.0	0.9

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	28.5	3.5	10.0	1.7	3.7	1.3	5.6

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	13.9	11.2	6.1	0.3	0.1	0.1	0.6

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	21.4	11.7	5.1	25.9	14.0	5.4	19.5	4.8	1.4	29.5	6.1	2.6

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	10.0

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Total Network Performance

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Stop Del/Veh (s) 85.1

Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	165	374	137
Average Queue (ft)	1560	120	80	59
95th Queue (ft)	1571	189	280	125
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	100			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		16	2	
Queuing Penalty (veh)		2	5	

Intersection: 2: I-10 EB Off Ramp & Miller Road

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	277	163	164	125	269
Average Queue (ft)	96	101	122	50	133
95th Queue (ft)	181	156	179	129	223
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		1	4		
Queuing Penalty (veh)		5	17		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	24
Queuing Penalty (veh)				1	6

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB	NB
Directions Served	LR	L	T	T
Maximum Queue (ft)	91	31	191	196
Average Queue (ft)	17	4	30	45
95th Queue (ft)	60	21	122	151
Link Distance (ft)	388		184	184
Upstream Blk Time (%)			0	1
Queuing Penalty (veh)			1	3
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			2	
Queuing Penalty (veh)			0	

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	62	55	53	95	76
Average Queue (ft)	14	8	2	7	5
95th Queue (ft)	39	35	18	47	38
Link Distance (ft)	210		184	184	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		70			75
Storage Blk Time (%)		0	0		0
Queuing Penalty (veh)		0	0		0

Intersection: 5: Miller Road & South Drwy

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	100	22
Average Queue (ft)	42	1
95th Queue (ft)	89	8
Link Distance (ft)	224	184
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	294	212	32	224	275	203	209	130
Average Queue (ft)	107	88	9	52	78	60	89	36
95th Queue (ft)	210	176	31	123	187	136	175	94
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)					1		4	0
Queuing Penalty (veh)					1		6	1

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	44	31	31
Average Queue (ft)	19	2	2
95th Queue (ft)	37	15	16
Link Distance (ft)	306	248	336
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Durango Street & Miller Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	257	47	350	175	267	175	158	266	240	115	250	124
Average Queue (ft)	87	5	8	135	30	49	41	123	30	35	118	7
95th Queue (ft)	192	25	27	187	139	103	104	203	102	75	227	46
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)												0
Queuing Penalty (veh)												2
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)	2		0	8			0	4	0			9
Queuing Penalty (veh)	1		0	11			0	11	0			9

Network Summary

Network wide Queuing Penalty: 81
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	303.0	319.0	9.3	4.1	7.3	199.9

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	15.7	12.5	7.0	5.4	14.6	15.9	32.2	18.5

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	67.8	7.0	4.2	6.1	1.0	1.7	3.7

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	50.3	19.9	9.0	2.5	0.0	0.0	1.9

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	68.4	86.6	10.9	0.9	0.3	0.0	3.5

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	29.4	3.5	13.7	2.4	6.4	2.2	7.7

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	9.6	13.6	16.8	0.2	0.9	0.0	1.2

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	19.2	18.5	12.9	66.0	63.1	35.5	31.3	9.1	3.8	43.5	7.1	0.1

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	21.0

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Total Network Performance

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Stop Del/Veh (s)	98.5
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**Intersection: 1: Miller Road & I-10 WB Off Ramp**

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	162	190	72
Average Queue (ft)	1550	99	14	29
95th Queue (ft)	1575	156	74	54
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	97			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		2		
Queuing Penalty (veh)		0		

**Intersection: 2: I-10 EB Off Ramp & Miller Road**

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	223	151	166	125	477
Average Queue (ft)	99	101	145	55	239
95th Queue (ft)	170	157	184	148	428
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		1	11		1
Queuing Penalty (veh)		5	53		9
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	69
Queuing Penalty (veh)				0	33

**Intersection: 3: Miller Road & Yuma Road**

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	50	31	205	218	56
Average Queue (ft)	7	3	36	124	7
95th Queue (ft)	30	18	141	252	32
Link Distance (ft)	388		184	184	148
Upstream Blk Time (%)			0	7	
Queuing Penalty (veh)			1	33	
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

**Intersection: 4: Miller Road & North Drwy**

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	108	68	181	208	77
Average Queue (ft)	20	10	13	68	9
95th Queue (ft)	64	38	84	205	48
Link Distance (ft)	210		184	184	
Upstream Blk Time (%)			0	2	
Queuing Penalty (veh)			0	11	
Storage Bay Dist (ft)		70			75
Storage Blk Time (%)		1	0		0
Queuing Penalty (veh)		5	0		0

**Intersection: 5: Miller Road & South Drwy**

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	160	30	241	156
Average Queue (ft)	62	2	22	14
95th Queue (ft)	121	15	111	73
Link Distance (ft)	224		273	184
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		70		
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 6: Miller Road & Pima Street**

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	251	234	53	116	149	173	283	135
Average Queue (ft)	118	98	16	59	49	77	164	62
95th Queue (ft)	202	183	42	99	122	149	275	142
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)							2	
Queuing Penalty (veh)							17	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							12	0
Queuing Penalty (veh)							21	0

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	64	30	207
Average Queue (ft)	31	3	37
95th Queue (ft)	55	16	138
Link Distance (ft)	306	248	336
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Durango Street & Miller Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	144	45	118	175	825	153	44	429	240	112	265
Average Queue (ft)	48	14	15	167	356	61	9	182	84	55	151
95th Queue (ft)	114	39	56	191	831	119	30	356	212	106	297
Link Distance (ft)		637			1278			414			248
Upstream Blk Time (%)								2			4
Queuing Penalty (veh)								0			37
Storage Bay Dist (ft)	235		330	150		150	135		215	275	
Storage Blk Time (%)				43		1		12	0		14
Queuing Penalty (veh)				73		3		49	1		15

Network Summary

Network wide Queuing Penalty: 366
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## **APPENDIX I**

### **2020 SIGNALIZED STOP ANALYSIS WORKSHEETS**

1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	45.5	51.7	10.5	6.7	8.2	37.4

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	13.8	4.0	11.8	8.2	8.7	32.8	14.4	11.1

3: Miller Road & Yuma Road Performance by movement

Movement	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	12.8	0.0	9.9	0.4	1.1	5.7

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	185.5	50.0	11.5	11.5	0.7	0.1	8.0

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	All
Stop Del/Veh (s)	835.1	1002.3	24.2	1.5	33.5

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	204.8	53.6	26.3	71.9	9.5	3.1	63.0

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	2696.3	1443.3	5.9	34.4	0.2	0.0	43.0

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	186.0	15.5	11.0	59.7	31.3	43.9	29.1	36.3	12.3	78.7	1.5	0.5

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	30.9

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Total Network Performance

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Stop Del/Veh (s)	137.0
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1067	168	30	75
Average Queue (ft)	493	57	3	15
95th Queue (ft)	862	139	15	48
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		2		
Queuing Penalty (veh)		0		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	171	150	163	174	488
Average Queue (ft)	86	77	151	22	371
95th Queue (ft)	145	153	160	89	488
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		2	12		1
Queuing Penalty (veh)		13	81		4
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				1	24
Queuing Penalty (veh)				10	4

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	78	229	215	155
Average Queue (ft)	14	24	192	9
95th Queue (ft)	45	107	204	65
Link Distance (ft)	388	184	184	148
Upstream Blk Time (%)		0	17	1
Queuing Penalty (veh)		3	116	9
Storage Bay Dist (ft)				
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	87	31	212	246	196	150
Average Queue (ft)	21	10	52	199	20	5
95th Queue (ft)	58	33	161	221	116	51
Link Distance (ft)	210		184	184	184	
Upstream Blk Time (%)			0	24	1	
Queuing Penalty (veh)			3	158	11	
Storage Bay Dist (ft)		70				75
Storage Blk Time (%)			1		3	
Queuing Penalty (veh)			0		2	

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	276	379	328	186
Average Queue (ft)	228	253	293	38
95th Queue (ft)	269	401	315	141
Link Distance (ft)	224	273	273	184
Upstream Blk Time (%)	89	7	32	3
Queuing Penalty (veh)	0	48	206	21
Storage Bay Dist (ft)				
Storage Blk Time (%)		2		
Queuing Penalty (veh)		0		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	526	515	355	275	407	406	290	185
Average Queue (ft)	393	440	80	171	348	355	175	60
95th Queue (ft)	574	563	318	361	417	378	319	171
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)	23	33			30	62	5	
Queuing Penalty (veh)	0	0			174	355	34	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		74		0	45		18	
Queuing Penalty (veh)		8		0	55		22	

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	T
Maximum Queue (ft)	321	30	271	284	167
Average Queue (ft)	232	4	230	245	6
95th Queue (ft)	412	19	317	304	57
Link Distance (ft)	306	248	248	248	336
Upstream Blk Time (%)	65		7	18	
Queuing Penalty (veh)	0		30	71	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	288	64	84	225	509	224	209	466	290	163	261	22
Average Queue (ft)	122	7	9	132	103	53	30	413	210	68	60	3
95th Queue (ft)	291	33	35	238	390	126	117	506	417	146	163	15
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)								49				0
Queuing Penalty (veh)								0				1
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)	13			22				56				1
Queuing Penalty (veh)	8			20				135				1

Network Summary

Network wide Queuing Penalty: 1606
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	27.4	27.8	24.9	14.4	8.4	14.0	23.0

2: Miller Road & I-10 EB Off Ramp Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	31.8	18.5	11.6	23.3	76.1	20.4	21.1

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	10.4	8.7	25.1	2.0	3.9	14.0

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	191.3	42.7	9.6	25.3	0.2	0.2	14.2

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	171.8	93.5	44.5	1.0	2.4	31.2

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	236.1	133.2	22.7	83.7	8.7	3.7	70.4

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	19.5	9.3	3.0	32.4	0.1	0.0	18.9

8: Miller Road & Durango Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	34.3	10.8	2.7	28.1	19.4	25.7	42.6	34.1	13.8	50.0	6.0	1.0

8: Miller Road & Durango Street Performance by movement

Movement	All
Stop Del/Veh (s)	23.5

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Total Network Performance

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Stop Del/Veh (s)	118.4
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	721	163	247	124
Average Queue (ft)	349	85	38	36
95th Queue (ft)	605	176	163	95
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		8		
Queuing Penalty (veh)		1		

Intersection: 2: Miller Road & I-10 EB Off Ramp

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	270	149	182	125	486
Average Queue (ft)	140	120	158	55	383
95th Queue (ft)	250	200	173	137	524
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		13	24		2
Queuing Penalty (veh)		62	105		11
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				15	30
Queuing Penalty (veh)				73	10

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	31	254	255	75
Average Queue (ft)	9	95	199	3
95th Queue (ft)	31	226	220	26
Link Distance (ft)	388	184	184	148
Upstream Blk Time (%)		5	36	
Queuing Penalty (veh)		25	159	
Storage Bay Dist (ft)				
Storage Blk Time (%)		9		
Queuing Penalty (veh)		0		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	120	94	292	218	199	89
Average Queue (ft)	26	11	105	199	13	16
95th Queue (ft)	86	46	262	211	82	67
Link Distance (ft)	210		184	184	184	
Upstream Blk Time (%)			6	42	0	
Queuing Penalty (veh)			27	183	2	
Storage Bay Dist (ft)		70				75
Storage Blk Time (%)			5		1	0
Queuing Penalty (veh)			1		1	0

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB	SB
Directions Served	LR	T	T	TR
Maximum Queue (ft)	239	388	309	198
Average Queue (ft)	86	258	286	43
95th Queue (ft)	188	457	302	158
Link Distance (ft)	224	273	273	184
Upstream Blk Time (%)	7	15	45	1
Queuing Penalty (veh)	0	62	188	8
Storage Bay Dist (ft)				
Storage Blk Time (%)		7		
Queuing Penalty (veh)		0		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	526	526	305	225	407	401	287	135
Average Queue (ft)	377	381	36	98	282	296	159	76
95th Queue (ft)	635	631	190	249	455	460	308	156
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)	35	46			28	47	3	
Queuing Penalty (veh)	0	0			101	172	17	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)		60	0	0	36		13	1
Queuing Penalty (veh)		7	0	0	31		17	3

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	T
Maximum Queue (ft)	48	31	286	288	53
Average Queue (ft)	17	2	152	165	2
95th Queue (ft)	31	15	333	357	18
Link Distance (ft)	306	248	248	248	336
Upstream Blk Time (%)			10	15	
Queuing Penalty (veh)			23	34	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: Miller Road & Durango Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	255	23	56	166	212	161	160	466	240	151	248	21
Average Queue (ft)	67	8	11	93	19	47	29	263	120	62	99	2
95th Queue (ft)	158	25	43	154	84	119	120	541	293	122	223	10
Link Distance (ft)		637			1278			414			248	
Upstream Blk Time (%)								31				0
Queuing Penalty (veh)								0				0
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)	1			2		1	0	37	0			9
Queuing Penalty (veh)	0			1		3	0	105	1			10

Network Summary

Network wide Queuing Penalty: 1448
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBT	WBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	186.5	187.1	194.0	26.4	8.4	21.9	11.8	133.0

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	50.0	13.0	12.5	4.3	53.8	22.3	13.9

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	107.8	13.6	13.4	2.8	0.2	0.2	1.7

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	27.7	18.8	8.4	0.6	0.0	0.1	0.6

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	26.2	24.3	1.6	0.3	0.0	0.0	1.1

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	28.6	3.5	9.1	1.8	5.0	2.4	6.2

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	22.1	9.0	11.9	0.3	0.1	0.1	0.6

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	22.2	12.3	7.0	25.4	13.6	6.4	27.0	5.4	1.4	23.9	4.6	1.5

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	10.0

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Total Network Performance

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Stop Del/Veh (s)	68.2
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Intersection: 1: Miller Road & I-10 WB Off Ramp

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	165	481	240
Average Queue (ft)	1483	128	120	66
95th Queue (ft)	1701	201	411	172
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	62		1	
Queuing Penalty (veh)	0		2	
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		19	4	
Queuing Penalty (veh)		2	10	

Intersection: 2: I-10 EB Off Ramp & Miller Road

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	283	160	165	125	492
Average Queue (ft)	108	120	102	43	462
95th Queue (ft)	227	200	160	122	527
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		16	1		6
Queuing Penalty (veh)		72	5		42
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				3	37
Queuing Penalty (veh)				22	10

Intersection: 3: Miller Road & Yuma Road

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	100	124	202	255	22
Average Queue (ft)	14	10	83	35	1
95th Queue (ft)	52	50	214	143	7
Link Distance (ft)	388		184	184	148
Upstream Blk Time (%)			7	2	
Queuing Penalty (veh)			30	7	
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			10		
Queuing Penalty (veh)			1		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	62	95	188	184	85
Average Queue (ft)	10	14	38	9	9
95th Queue (ft)	37	51	135	69	51
Link Distance (ft)	210		184	184	
Upstream Blk Time (%)			0	0	
Queuing Penalty (veh)			2	2	
Storage Bay Dist (ft)		70			75
Storage Blk Time (%)		1	5		0
Queuing Penalty (veh)		4	2		1

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	96	31	247	68	68
Average Queue (ft)	39	1	10	2	3
95th Queue (ft)	80	11	86	23	26
Link Distance (ft)	224		273	273	184
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		70			
Storage Blk Time (%)			1		
Queuing Penalty (veh)			0		

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	218	147	32	78	100	210	280	135
Average Queue (ft)	105	79	8	39	39	57	142	54
95th Queue (ft)	200	137	30	74	92	132	268	136
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							2	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)							9	0
Queuing Penalty (veh)							12	1

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	78	31	73
Average Queue (ft)	20	4	3
95th Queue (ft)	51	19	25
Link Distance (ft)	306	248	336
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Durango Street & Miller Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	223	67	20	175	323	159	158	448	240	90	260	124
Average Queue (ft)	92	7	8	131	63	44	49	140	42	41	120	7
95th Queue (ft)	184	33	21	182	235	106	113	294	136	74	237	45
Link Distance (ft)		637			1278			414				248
Upstream Blk Time (%)								0				0
Queuing Penalty (veh)								0				2
Storage Bay Dist (ft)	235		330	150		150	135		215	275		100
Storage Blk Time (%)	0			7		0	0	6	0			9
Queuing Penalty (veh)	0			10		0	1	16	0			8

Network Summary

Network wide Queuing Penalty: 267
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1: Miller Road & I-10 WB Off Ramp Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	All
Stop Del/Veh (s)	225.8	224.3	13.7	7.7	11.5	153.6

2: I-10 EB Off Ramp & Miller Road Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Stop Del/Veh (s)	46.6	19.3	18.0	10.8	5.1	55.2	22.6	14.7

3: Miller Road & Yuma Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	67.8	21.2	4.3	1.6	1.0	0.8	1.5

4: Miller Road & North Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	113.1	47.2	7.7	0.4	1.3	0.1	1.7

5: Miller Road & South Drwy Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Stop Del/Veh (s)	50.3	53.4	0.2	3.2	1.3	3.5

6: Miller Road & Pima Street Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	31.5	4.1	19.0	1.1	10.7	5.7	9.4

7: Miller Road & Truck Drwy Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Stop Del/Veh (s)	23.0	75.6	5.3	0.2	9.3	0.1	7.4

8: Durango Street & Miller Road Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Stop Del/Veh (s)	23.5	11.5	9.9	41.0	34.5	16.1	42.9	9.9	3.1	174.1	11.1	0.4

8: Durango Street & Miller Road Performance by movement

Movement	All
Stop Del/Veh (s)	21.3

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Total Network Performance

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Stop Del/Veh (s) 84.7

**Intersection: 1: Miller Road & I-10 WB Off Ramp**

Movement	WB	NB	NB	SB
Directions Served	LTR	L	T	TR
Maximum Queue (ft)	1565	164	245	96
Average Queue (ft)	1552	93	18	33
95th Queue (ft)	1573	167	116	72
Link Distance (ft)	1502		474	620
Upstream Blk Time (%)	93			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		140		
Storage Blk Time (%)		4		
Queuing Penalty (veh)		0		

**Intersection: 2: I-10 EB Off Ramp & Miller Road**

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	T	R	L	T
Maximum Queue (ft)	291	159	200	125	490
Average Queue (ft)	156	122	136	40	440
95th Queue (ft)	276	184	178	101	500
Link Distance (ft)	1233	148	148		474
Upstream Blk Time (%)		9	3		5
Queuing Penalty (veh)		42	16		49
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	33
Queuing Penalty (veh)				1	15

**Intersection: 3: Miller Road & Yuma Road**

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	90	31	185	225	166
Average Queue (ft)	11	2	50	60	31
95th Queue (ft)	47	15	145	175	122
Link Distance (ft)	388		184	184	148
Upstream Blk Time (%)			1	1	3
Queuing Penalty (veh)			7	3	39
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			3		
Queuing Penalty (veh)			0		

Intersection: 4: Miller Road & North Drwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	87	68	198	86	201	76
Average Queue (ft)	21	10	12	8	35	6
95th Queue (ft)	59	41	84	45	146	39
Link Distance (ft)	210		184	184	184	
Upstream Blk Time (%)			0		3	
Queuing Penalty (veh)			2		37	
Storage Bay Dist (ft)		70				75
Storage Blk Time (%)		0	1		6	0
Queuing Penalty (veh)		1	0		6	0

Intersection: 5: Miller Road & South Drwy

Movement	EB	NB	SB
Directions Served	LR	T	TR
Maximum Queue (ft)	116	31	202
Average Queue (ft)	48	1	72
95th Queue (ft)	98	10	208
Link Distance (ft)	224	273	184
Upstream Blk Time (%)			5
Queuing Penalty (veh)			50
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Miller Road & Pima Street

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	R
Maximum Queue (ft)	265	193	50	182	188	114	289	135
Average Queue (ft)	95	98	20	69	39	46	209	78
95th Queue (ft)	181	174	47	135	112	102	344	168
Link Distance (ft)	463	463			336	336	273	
Upstream Blk Time (%)							9	
Queuing Penalty (veh)							102	
Storage Bay Dist (ft)			280	200				110
Storage Blk Time (%)				0	0		23	0
Queuing Penalty (veh)				0	0		38	3

Intersection: 7: Miller Road & Truck Drwy

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	215	30	363
Average Queue (ft)	58	2	111
95th Queue (ft)	147	14	353
Link Distance (ft)	306	248	336
Upstream Blk Time (%)			6
Queuing Penalty (veh)			26
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Durango Street & Miller Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	132	60	61	175	494	175	27	429	240	247	319
Average Queue (ft)	43	9	14	158	227	69	8	218	118	129	198
95th Queue (ft)	108	36	46	201	524	142	27	444	280	254	354
Link Distance (ft)		637			1278			414			248
Upstream Blk Time (%)								3		5	17
Queuing Penalty (veh)								0		0	167
Storage Bay Dist (ft)	235		330	150		150	135		215	275	
Storage Blk Time (%)				33	0	1		14	0	5	20
Queuing Penalty (veh)				56	0	3		54	0	45	23

Network Summary

Network wide Queuing Penalty: 786
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