



PENNONI ASSOCIATES INC.  
CONSULTING ENGINEERS

# *TRAFFIC IMPACT STUDY*



## *P o c o n o P M a n o r* *R e s o r t & C a s i n o*

*TOBYHANNA TOWNSHIP*  
*MONROE COUNTY, PA*

**Prepared for:**  
**Pocono Manor Investors L.P.**  
**Matzel Development**  
**P.O. Box 38, Pocono Manor Inn**  
**Pocono Manor, PA 18349**  
**&**  
**Matzel Development**  
**1411 State Highway 35 North, Suite 200**  
**Ocean, NJ 07712**

**Prepared by:**  
**Pennoni Associates, Inc.**  
**2041 Avenue C, Suite 100**  
**Bethlehem, PA 18017**

**December 2005**

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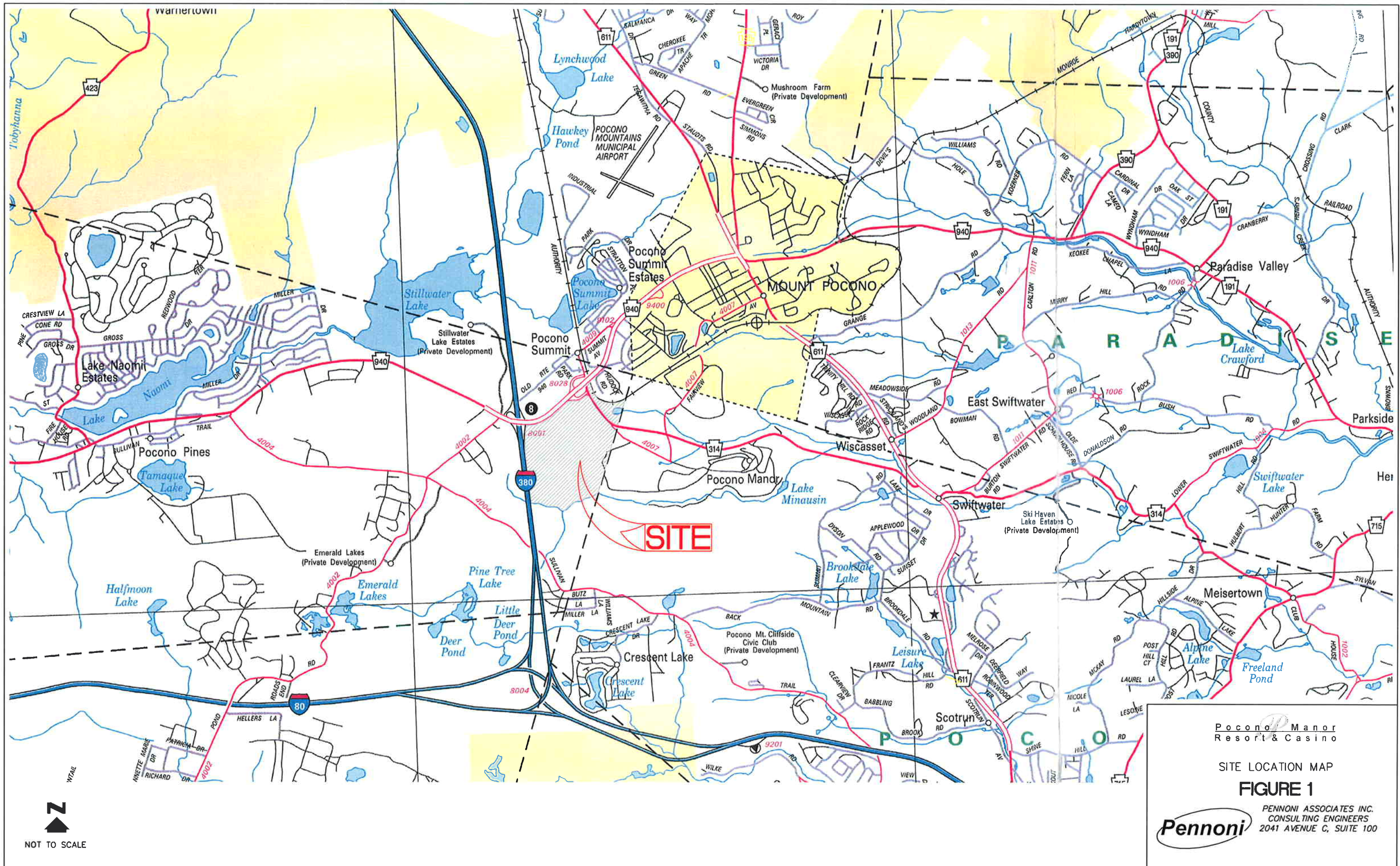
## **EXECUTIVE SUMMARY**

Pocono Manor Investors L.P. proposes to construct a resort development to be known as Pocono Manor Resort & Casino. The site is ideally located on the southeast quadrant of the intersection of two major highways, Interstate 380 and State Route 940, in Tobyhanna Township, Monroe County (Figure 1). The proposed development will consist of a resort/casino with 5,000 slot machines, a 300,000 square foot retail village, a 50,000 square foot professional office building, and 425 residential condominiums/townhouses. In addition to the aforementioned, the resort/casino portion of the development includes the following amenities: hotel rooms/time share villas, pools, spas, convention/meeting rooms, restaurants, theater, retail shops, and a hospitality/gaming school. Figure 2 illustrates the proposed layout for the Pocono Manor Resort & Casino. Access to the site will be provided via two high volume driveways onto State Route 314 and from northbound I-380 via a modification to the existing northbound off ramp. Figure 2 also illustrates the conceptual site access. The project is anticipated to be completed by the end of 2007.

The scope of this traffic impact study includes the following off site intersections:

- SR 0940/Long Pond Road/Private Road
- SR 0940/Southbound I-380 Ramps
- SR 0940/Northbound I-380 Ramps
- SR 0314/Westbound SR 0940 Ramps
- SR 0314/Eastbound SR 0940 Ramps
- SR 0940/Industrial Drive
- SR 0940/Oak Street
- SR 0940/SR 0611/SR 0196/Driveway
- SR 0314 (West leg)/SR 0611
- SR 0314 (East Leg)/SR 0611

Given that the proposed development is a resort and casino, manual traffic turning movement counts were not only conducted for a typical AM peak period (7:00 AM to 9:00 AM), but were also conducted for a Friday late afternoon peak period (4:00 PM to 6:00 PM), a Friday evening peak period (6:00 PM to 8:00PM) and a Saturday evening peak period (4:00 PM to 8:00 PM).



**SITE**

Pocono Manor  
Resort & Casino

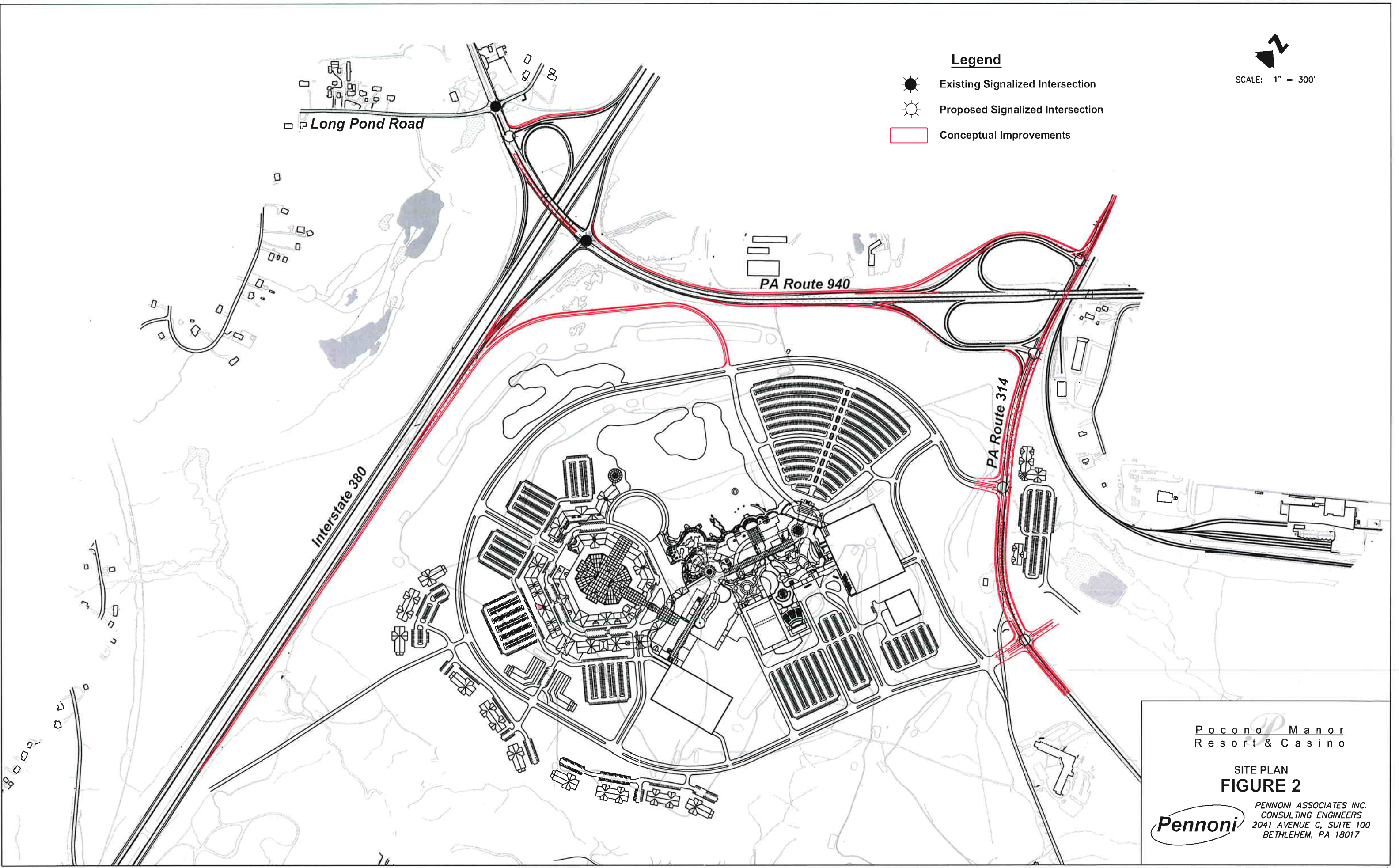
SITE LOCATION MAP

**FIGURE 1**




PENNONI ASSOCIATES INC.  
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2041 AVENUE C, SUITE 100




NOT TO SCALE



**Legend**

-  Existing Signalized Intersection
-  Proposed Signalized Intersection
-  Conceptual Improvements

  
 SCALE: 1" = 300'

Pocono Manor  
 Resort & Casino

**SITE PLAN  
 FIGURE 2**

**Pennoni**  
 PENNONI ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 2041 AVENUE C, SUITE 100  
 BETHLEHEM, PA 18017

Traffic counts between adjacent intersections were balanced using the higher traffic volumes counted. Also, since the seasonal adjustment factors (obtained from the Pennsylvania Department of Transportation (PENNDOT) ITMS Website) were all less than 1.0, the counts were not reduced to account for the time of year they were taken. This method of adjusting the raw traffic data represents a conservative approach.

Trip Generation for the proposed development resulted in a total of 1,085 trips for the AM peak hour; 3,202 trips for the Friday late afternoon peak hour; 3,167 trips for the Friday evening peak hour; and 3,167 trips for the Saturday evening peak hour. To accommodate the additional traffic to the area roadways, the following off site improvements are proposed:

**SR 0940/Long Pond Road/Private Road**

- Northbound right turn lane

**SR 0940/Southbound I-380 Off Ramp**

- Signalization
- Dual left turn lanes for Southbound Off Ramp

**SR 0940/Northbound I-380 Off Ramp**

- Signal phasing and timing

**SR 0314/SR 0940 Westbound Ramps**

- Signalization
- Dual left turn lanes northbound on SR 0314

**SR 0314/SR 0940 Eastbound Ramps**

- Signalization
- Additional through lane northbound on SR 0314

**SR 0940/Industrial Drive**

- Signal timing

**SR 0940/Oak Street**

- Signal timing

**SR 0940/SR 0611/SR 0193/Driveway**

- Contribution towards construction

**SR 0611/SR 0314 (West leg)**

- Signalization

**SR 0611/SR 0314 (East leg)**

- Signal Timing

Two study years were evaluated: 2007 (the year of opening) and 2017 (the ten-year buildout). Table 1 summarizes the levels of service for the study intersections for both study years. As can be seen, although some level of service drops are expected, the proposed off-site improvements mitigate most of the drops. Where mitigation is not proposed, a fair share contribution to the affected municipality is proposed.

Given the conservative approach to the traffic analysis and the ideal location along Interstate Route 380 and State Route 940, the Pocono Manor Resort & Casino development traffic can be adequately accommodated by the existing roadway network with the improvements mentioned above.



Table 1 - Level of Service Comparison

December 2005

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940/Long Pond Road/ Private Road	EB L	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	EB TR	C	C	B	B	C	C	B	B	C	D	C	C	C	D	C	C
	WB L	B	B	B	B	B	C	B	B	B	D	A	A	B	D	A	A
	WB TR	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A
	NB LT	A	C	A	A	C	C	C	C	B	C	B	B	C	D	C	C
	NB R	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A
SB LTR	B	C	B	B	B	C	C	C	C	D	C	C	C	C	C	C	
Overall Intersection		B	B	B	B	B	B	B	B	B	C	B	B	B	C	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940/ I-380 Southbound Ramps	EB T	n/a	n/a	n/a	n/a	C	A	B	B	n/a	n/a	n/a	n/a	C	B	B	B
	EB R	n/a	n/a	n/a	n/a	A	A	A	A	n/a	n/a	n/a	n/a	A	A	A	A
	WB T	n/a	n/a	n/a	n/a	B	A	B	B	n/a	n/a	n/a	n/a	B	B	B	B
	WB R	n/a	n/a	n/a	n/a	A	B	A	A	n/a	n/a	n/a	n/a	A	B	A	A
	SB L	F(462.5)	C	C	C	B	C	B	B	F(ERR)	F(1004.4)	F(65.2)	E	B	C	B	B
	SB R	n/a	n/a	n/a	n/a	A	A	A	A	n/a	n/a	n/a	n/a	A	B	A	A
Overall Intersection		n/a	n/a	n/a	n/a	B	B	B	B	n/a	n/a	n/a	n/a	B	B	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940/ I-380 Northbound Ramps	EB TR	B	A	A	A	B	A	A	B	B	A	A	A	B	B	A	B
	WB T	C	B	A	A	C	D	C	C	A	B	B	B	C	D	C	C
	WB R	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	NB L	A	C	C	C	C	D	C	C	C	C	C	C	C	D	D	C
	NB R	A	A	A	A	A	B	B	A	A	A	A	A	B	C	B	B
Overall Intersection		B	B	B	B	B	C	B	B	B	B	B	B	B	C	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0314/ SR 0940 Westbound Ramps	EB L	B	C	B	A	D	D	D	D	B	C	B	B	D	D	D	D
	EB R	A	A	A	A	B	B	B	B	A	A	A	A	B	B	B	B
	NB L	A	A	A	A	D	C	C	D	A	A	A	A	D	C	D	D
	NB LT	n/a	n/a	n/a	n/a	A	B	B	B	n/a	n/a	n/a	n/a	A	D	C	B
	SB T	n/a	n/a	n/a	n/a	B	C	C	C	n/a	n/a	n/a	n/a	B	D	C	C
	SB R	n/a	n/a	n/a	n/a	A	B	B	B	n/a	n/a	n/a	n/a	A	B	B	B
Overall Intersection		n/a	n/a	n/a	n/a	C	C	C	C	n/a	n/a	n/a	n/a	B	C	C	C

Table 1 - Level of Service Comparison

December 2005

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0314/ SR 0940 Eastbound Ramps	EB L	A	B	A	A	C	C	D	D	A	B	B	A	C	C	D	D
	EB R	B	A	A	A	B	B	B	B	B	A	A	A	B	C	B	B
	NB L	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	NB T	n/a	n/a	n/a	n/a	A	A	B	B	n/a	n/a	n/a	n/a	A	B	B	B
	SB T	n/a	n/a	n/a	n/a	A	A	A	A	n/a	n/a	n/a	n/a	A	A	A	A
SB R	n/a	n/a	n/a	n/a	A	A	A	A	n/a	n/a	n/a	n/a	A	A	A	A	
Overall Intersection		n/a	n/a	n/a	n/a	A	B	B	B	n/a	n/a	n/a	n/a	A	B	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940/ Industrial Drive	EB TR	C	D	C	C	C	C	C	C	C	D	C	C	C	D	C	C
	WB L	B	D	B	B	B	C	B	B	B	C	B	B	B	C	B	B
	WB T	B	C	B	B	B	C	B	B	B	C	B	B	B	C	B	B
	WBR	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	NB L	B	C	B	B	B	C	B	B	B	D	B	B	B	D	B	B
	NB T	B	B	C	B	B	B	C	B	C	B	C	B	C	B	C	B
	NB R	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	SB L	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
SB TR	A	C	B	B	A	C	B	B	A	D	B	B	A	D	B	B	
Overall Intersection		B	C	B	B	B	C	C	B	B	C	B	B	B	D	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940/ Oak Street	EB L	B	B	B	C	B	B	B	C	B	B	C	C	B	B	C	C
	EB TR	C	D	C	C	C	D	C	C	C	D	C	C	C	D	C	C
	WB L	B	C	B	B	B	C	B	B	B	C	B	B	B	C	B	B
	WB T	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	WBR	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	NB L	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	NB R	B	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A
	SB L	C	D	C	C	C	D	C	C	C	D	C	C	C	D	C	C
SB R	B	A	A	A	B	A	A	A	B	A	A	A	B	A	A	A	
Overall Intersection		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940 Westbound/ SR 0611/SR 0196	EB L	E	E	D	D	D	E	D	D	E	E	D	D	E	E	D	D
	EB T	D	F(80.2)	E	D	D	F(90.1)	E	D	D	F(98.8)	E	D	E	F(125.1)	F(81.1)	E
	EB R	A	B	B	A	B	C	B	B	B	D	B	B	B	F(89.3)	B	B
	WB L	E	F(375.9)	F(81.4)	E	F(94.6)	F(92.5)	F(109.1)	E	F(148.2)	F(119.2)	F(188.0)	E	F(159.0)	F(119.2)	F(191.9)	F(97.9)
	WB TR	D	D	D	D	D	D	D	D	D	E	D	D	D	E	D	D
	NB L	C	C	C	A	C	D	C	B	C	E	C	B	C	F(98.8)	C	B
	NB T	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	NB R	B	D	B	B	B	D	B	B	B	F(154.3)	B	B	B	F(154.4)	C	B
	SB LT	E	F(159.5)	E	D	E	F(119.4)	F(80.3)	D	E	F(391.2)	F(296.8)	D	E	F(462.9)	F(180.5)	D
SB R	B	C	A	A	B	C	A	A	B	D	A	A	B	D	B	A	
Overall Intersection		D	E	C	C	D	D	D	C	D	F(124.0)	E	C	D	F(144.0)	E	C

Table 1 - Level of Service Comparison

December 2005

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0940 Eastbound/ SR 0611/Driveway	EB LTR	D	F(111.5)	D	C	D	F(217.9)	D	C	D	F(583.8)	D	C	D	F(747.1)	F(94.1)	C
	WB LT	D	E	D	D	D	E	D	D	D	E	D	D	D	E	D	D
	WB R	A	A	A	A	A	A	A	A	A	B	A	A	A	D	A	A
	NB L	C	C	C	C	C	C	C	C	C	D	C	C	C	D	C	C
	NB TR	C	D	D	C	C	D	D	C	C	E	D	C	C	E	D	C
	SB L	B	F(178.9)	B	A	A	F(213.1)	B	B	C	F(292.2)	B	B	C	F(335.0)	B	B
SB TR	A	B	A	A	A	B	A	A	B	D	D	A	A	D	B	A	
Overall Intersection		B	E	C	B	B	E	C	B	A	F(147.5)	C	B	B	F(176.8)	C	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0611/ SR 0314 (West Leg)	EB LR	F(67.9)	E	C	B	C	B	B	B	F(228.5)	F(248.9)	D	B	C	B	B	B
	NB LT	A	A	A	A	B	A	A	A	A	B	A	A	B	B	A	A
	SB TR	n/a	n/a	n/a	n/a	B	A	A	A	n/a	n/a	n/a	n/a	B	A	A	A
Overall Intersection		n/a	n/a	n/a	n/a	B	A	A	A	n/a	n/a	n/a	n/a	B	B	A	A

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0611/ SR 0314 (East Leg)	WB L	C	D	C	C	C	C	C	C	D	D	C	C	C	D	C	C
	WB R	A	A	A	B	A	A	A	B	A	A	A	B	A	A	A	B
	NB TR	B	C	B	A	B	C	B	A	B	C	B	A	C	C	B	A
	SB L	B	B	A	A	B	B	B	A	C	B	C	A	C	B	C	A
	SB TR	A	A	A	A	A	A	A	A	B	A	A	A	B	A	A	A
Overall Intersection		B	B	B	A	B	C	B	A	B	C	B	A	B	C	B	A

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0314/ Site Driveway A	EB L	X				C	C	C	C	X				D	C	C	C
	EB R					A	A	A	A					B	A	A	
	NB L					B	B	A	A					A	B	B	
	NB T					B	B	B	B					A	B	B	
	SB T					B	B	B	B					A	B	B	
	SB R					A	A	A	A					A	A	A	
Overall Intersection						B	C	B	B					A	B	B	B

Intersection	Move	2007 AM No-Build	2007 After No-Build	2007 PM No-Build	2007 SAT No-Build	2007 AM Build	2007 After Build	2007 PM Build	2007 SAT Build	2017 AM No-Build	2017 After No-Build	2017 PM No-Build	2017 SAT No-Build	2017 AM Build	2017 After Build	2017 PM Build	2017 SAT Build
SR 0314/ Site Driveway B	EB L	X				D	D	D	D	X				D	D	D	D
	EB T					B	B	B	B					C	B	B	
	EB R					A	A	A	A					A	A	A	
	WB LTR					B	B	C	C					A	B	B	
	NB L					B	B	B	B					A	B	B	
	NB TR					B	B	A	A					A	A	A	
	SB L					C	C	B	B					A	C	B	
	SB T					C	C	B	A					A	A	A	
SB R	B	B	A	A	A	A	A										
Overall Intersection						C	C	C	C					B	C	C	C

## **PROJECT DESCRIPTION**

Pocono Manor Investors L.P. proposes to construct a resort development to be known as Pocono Manor Resort & Casino. The site is ideally located on the southeast quadrant of the intersection of two major highways, Interstate 380 and State Route 940, in Tobyhanna Township, Monroe County (Figure 1). The proposed development will consist of a resort/casino with 5,000 slot machines, a 300,000 square-foot retail village, a 50,000 square-foot professional office building, and 425 residential condominiums/townhouses. In addition to the aforementioned, the resort/casino portion of the development includes the following amenities: hotel rooms/time share villas, pools, spas, convention/meeting rooms, restaurants, theater, retail shops, and a hospitality/gaming school. Figure 2 illustrates the proposed layout for the Pocono Manor Resort & Casino. Access to the site will be provided via two high volume driveways onto State Route 314 and from northbound I-380 via a modification to the existing northbound off ramp. Figure 2 also illustrates the conceptual site access. The project is anticipated to be completed by the end of 2007.

## **EXISTING ROADWAY CHARACTERISTICS**

Following are descriptions of the major roadways in the vicinity of the site which are expected to carry site traffic to/from the proposed Pocono Manor Resort & Casino.

Interstate 380 is a north-south roadway that borders the Pocono Manor Resort & Casino development to the west providing about 6,600 feet of frontage. The road is classified as an Urban Interstate. The I-380 Northbound Off Ramp onto SR 0940 is signalized with a two-phase operation while the Southbound Off Ramp is stop controlled. The Traffic Signal Permit Plan for the intersection of SR 0940 and the I-380 Northbound Off Ramp is located in Appendix A.

SR 0940 is a state maintained road with a primarily east-west orientation that borders the Pocono Manor Resort & Casino development to the north providing about 3,600 feet of frontage. It is classified an Urban Minor Arterial in the vicinity of the site frontage. SR 0940 has two through travel lanes in each direction with varying widths of shoulder and is posted with a speed limit of 45 miles-per-hour. At its intersection with Long Pond Road, it is signalized with a three-phase operation. The westbound approach of SR 0940 is provided an advance phase. Left turn lanes

are provided for both the eastbound and westbound approaches of SR 0940. At its intersection with Industrial Drive, it is signalized with a six-phase operation. Advance phases are provided for the westbound approach of SR 0940 and the northbound and southbound approaches of Industrial Drive. Eastbound left turns are prohibited at the intersection but are accommodated via a nearside jughandle. At its intersections with Oak Street SR 0940 is also signalized with a six-phase operation. The eastbound and westbound approaches of SR 0940 are provided advances and Oak Street is split-phased to accommodate the southbound dual left turn lanes. Through movements across Oak Street are prohibited. Traffic Signal Permit Plans for the aforementioned intersections are located in Appendix A.

SR 0611 is a north-south state-maintained road in the vicinity of the site. It is classified as a Central Rural Minor Arterial near the site. The road has two travel lanes in each direction with none to 10-foot shoulders and is posted with a speed limit of 45 miles-per-hour. At its intersection with SR 0940 and SR 0196 the intersection is signalized with a five-phase operation to accommodate the six legs of the intersection. Locally, this intersection is known as the ‘Five Points’ intersection. The Traffic Signal Permit Plan is located in Appendix A.

SR 0314 is a primarily a north-south state maintained road adjacent to the site. The road has one travel lane in each direction. West of SR 0611 the road has ten-foot lanes with four-foot shoulders with a speed limit of 40 miles-per-hour and east of SR 0611 the road has 12-foot lanes with no shoulders with a speed limit of 35 miles-per-hour. The west leg of SR 0314 at SR 0611 is stop controlled while the east leg is signalized with a three-phase operation. The southbound approach of SR 0314 is provided an advance phase. The Traffic Signal Permit Plan for the intersection of SR 0611 and SR 0314 is located in Appendix A. SR 0314 also intersects SR 0940 with a grade separate interchange. The SR 0940 Eastbound and Westbound Off Ramps onto SR 0314 are stop controlled.

### **PLANNED ROADWAY IMPROVEMENTS**

The Borough of Mount Pocono currently has a project under design for the ‘Five-Points’ intersection of SR 0940/SR 0611/SR 0196/Driveway. Construction is expected to be completed by the end of 2006. Appendix C contains the proposed traffic signal layout and geometry for the intersection. Proposed additional lanes include:

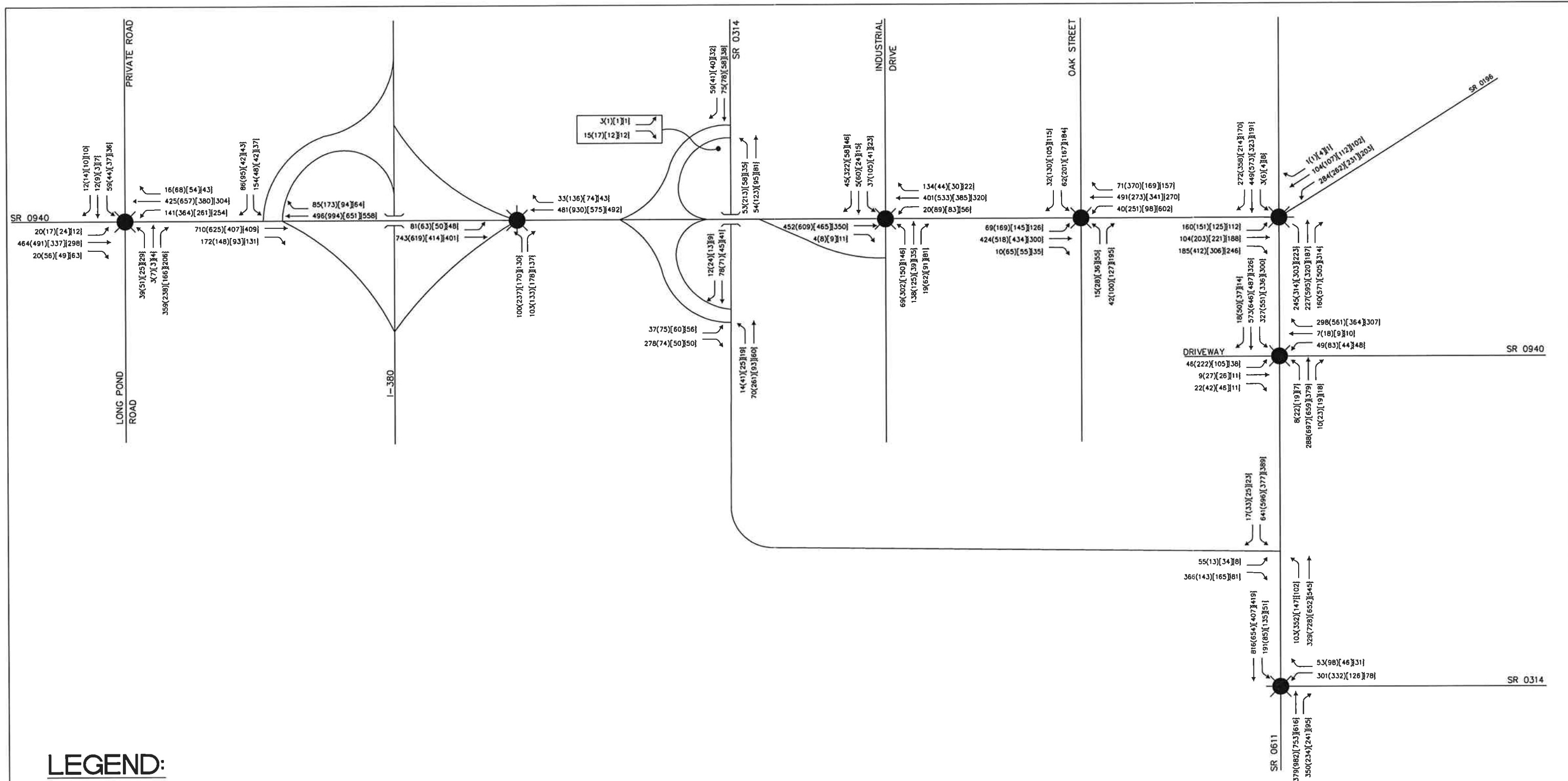
- Northbound left turn lane from SR 0611 into the Driveway;
- Westbound right turn lane from SR 0940 onto Northbound SR 0611;
- Southbound right turn lane from SR 0196 onto Northbound SR 0611;
- Southbound SR 0611 right turn lane onto Westbound SR 0940; and
- Eastbound SR 0940 right turn lane onto Southbound SR 0611.

## **2005 EXISTING TRAFFIC VOLUMES**


Turning movement counts were taken during the month of October at the following intersections:

- SR 0940/Long Pond Road/Private Road
- SR 0940/Southbound I-380 Ramps
- SR 0940/Northbound I-380 Ramps
- SR 0314/Westbound SR 0940 Ramps
- SR 0314/Eastbound SR 0940 Ramps
- SR 0940/Industrial Drive
- SR 0940/Oak Street
- SR 0940/SR 0611/SR 0196/Driveway
- SR 0314 (West leg)/SR 0611
- SR 0314 (East Leg)/SR 0611

Given that the proposed development is a resort and casino, manual traffic turning movement counts were not only conducted for a typical AM peak period (7:00 AM to 9:00 AM), but were also conducted for a Friday late afternoon peak period (4:00 PM to 6:00 PM), a Friday evening peak period (6:00 PM to 8:00PM) and a Saturday evening peak period (4:00 PM to 8:00 PM). Traffic counts between adjacent intersections were balanced using the higher traffic volumes counted. Also, since the seasonal adjustment factors (obtained from the Pennsylvania Department of Transportation (PENNDOT) Internet Traffic Monitoring System (ITMS) website) were all less than 1.0, the counts were not reduced to account for the time of year they were taken. This method of adjusting the raw traffic data represents a conservative approach. The existing traffic volumes are illustrated in Figure 3. Volume data obtained from the manual turning movement counts are located in Appendix B.



**LEGEND:**

 - Existing Traffic Signal

XX(X)(XX)(XX) - AM, LATE AFTERNOON, PM, SAT PEAK HOUR TRAFFIC VOLUMES



NOT TO SCALE

Pocono Manor  
Resort & Casino

2005 Existing Peak Hour Traffic Volumes

**FIGURE 3**



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The following table presents the Average Daily Traffic (ADT) for the major roadways in the vicinity of the site as obtained from the PENNDOT ITMS Website.

<b>Road</b>	<b>ADT (vehicles per day)</b>
I-380	22,000
SR 0940	20,000
SR 0314	3,500
SR 0611	14,500

Analysis and discussion of existing operations follow in the Operational Analysis section of the report.

### **2007 NO-BUILD TRAFFIC VOLUMES**

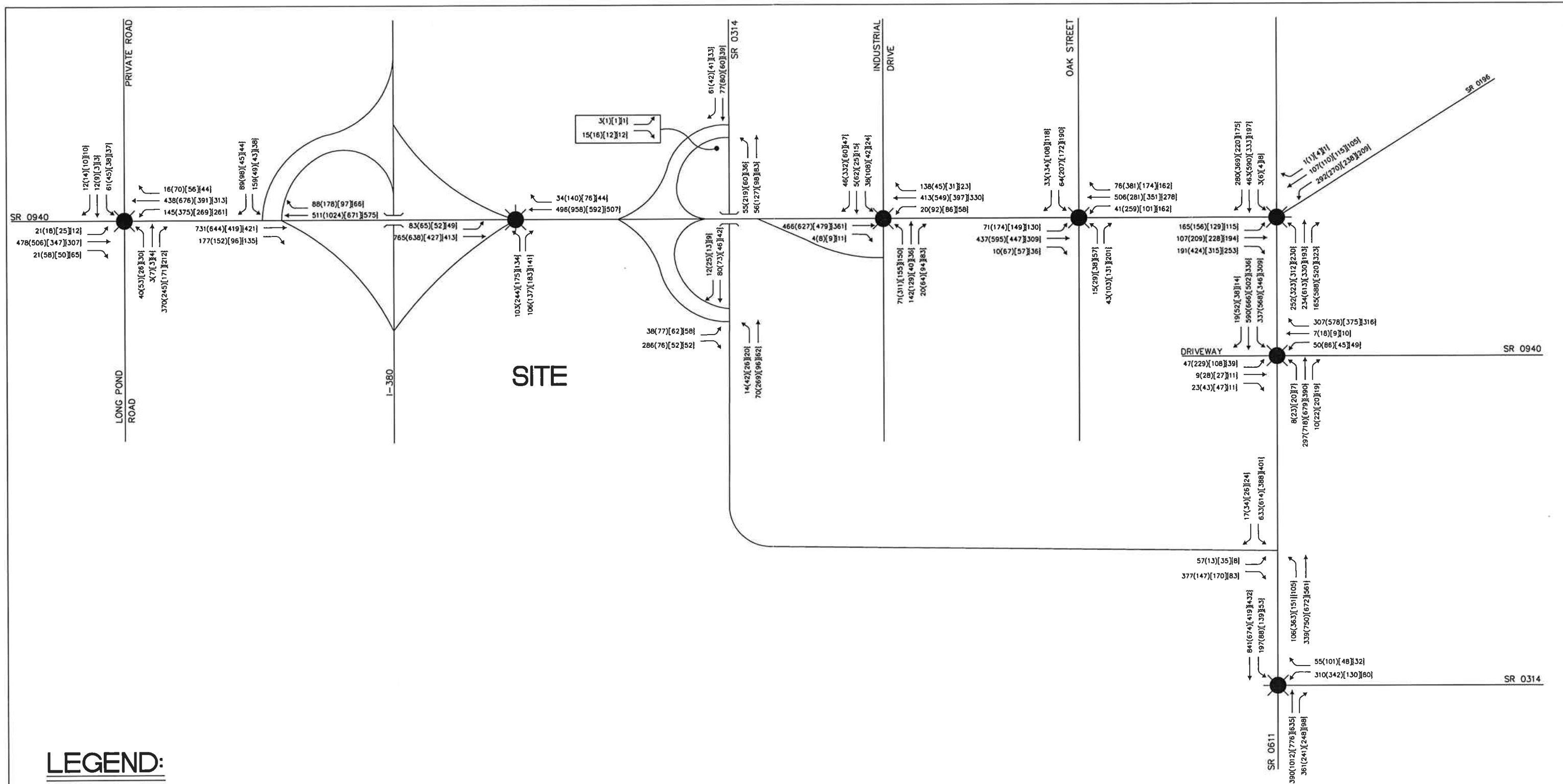
It is expected that the Pocono Manor Resort & Casino development will be fully constructed and operational by the end of 2007. Since the traffic counts were conducted in October 2005, a compounded growth rate of 1.5% was used to calculate future traffic for the opening design year. The 1.5% was obtained from the PENNDOT ITMS Website published population and traffic growth data for Monroe County and the specific roadway classifications.

Typically, in addition to the background growth rate used, traffic volumes from other approved developments in the immediate area should be included in the no-build traffic volumes. However, there are no other developments in the immediate vicinity of the site that have municipal and/or Pennsylvania Department of Transportation approval. Figure 4 illustrates the future 2007 no-build volumes.

### **2017 NO-BUILD TRAFFIC VOLUMES**

A ten-year from opening year analysis is provided. A 1.5% compounded growth rate was used to project peak hour traffic volumes to 2017. Figure 5 illustrates the 2017 no-build peak hour volumes used in the analyses. Analysis and discussion of future no-build operations follow in the Operational Analysis section of the report.





**LEGEND:**



Existing Traffic Signal

XX(XX)[XX]{XX} - AM, LATE AFTERNOON, PM, SAT PEAK HOUR TRAFFIC VOLUMES



NOT TO SCALE

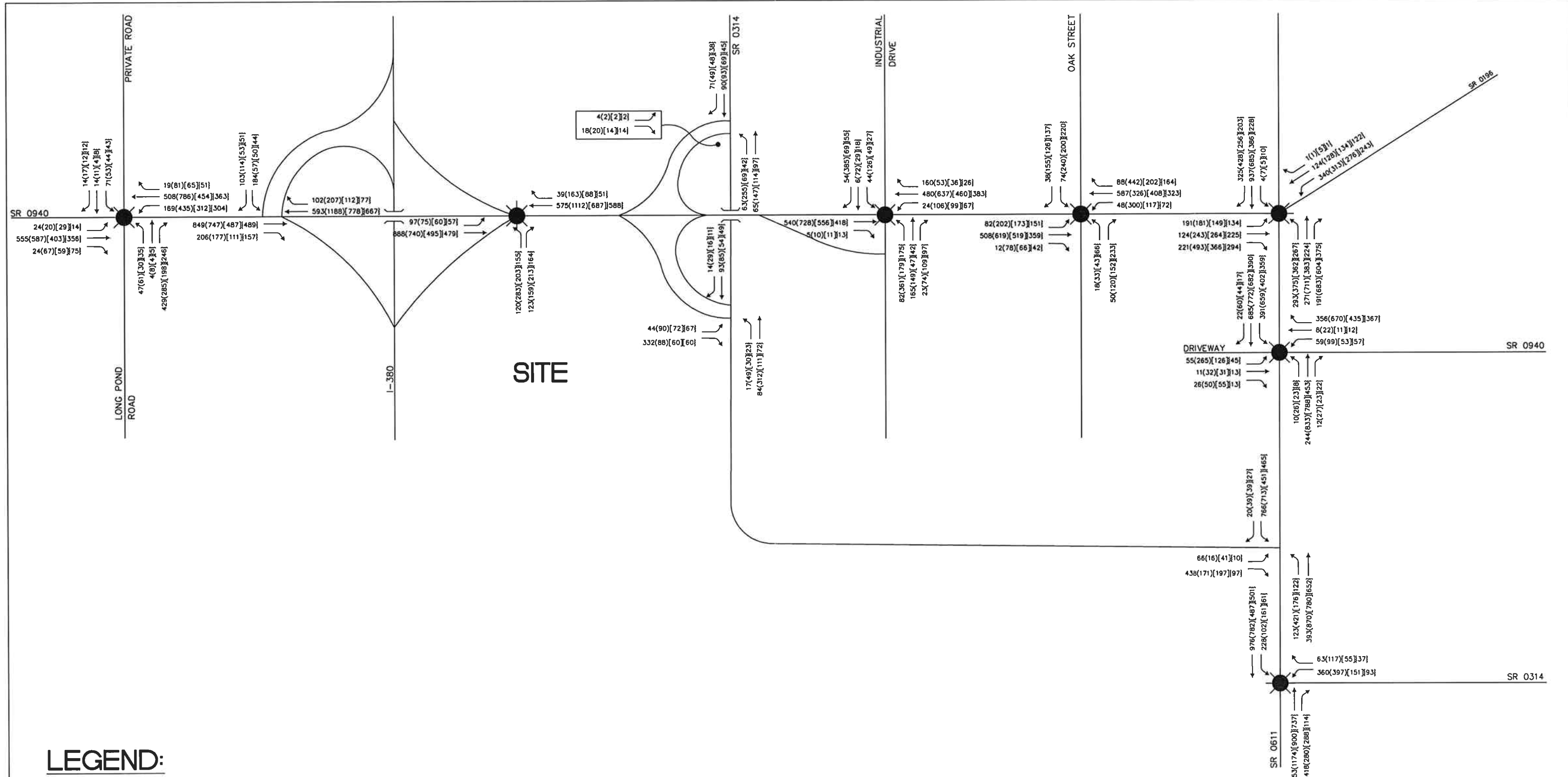
Pocono Manor  
Resort & Casino

2007 Future No-Build  
Peak Hour Traffic Volumes


**FIGURE 4**

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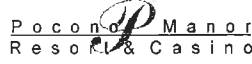

**LEGEND:**

 - Existing Traffic Signal

XX(XX)[XX]{XX} - AM, LATE AFTERNOON, PM, SAT PEAK HOUR TRAFFIC VOLUMES



NOT TO SCALE

  
 2017 Future No-Build  
 Peak Hour Traffic Volumes  
**FIGURE 5**  
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## **TRIP GENERATION AND DISTRIBUTION**

Trip Generation is the method of determining the amount of future traffic associated with a proposed land use. The Institute of Transportation Engineers' (ITE) Trip Generation, 7<sup>th</sup> Edition (2003), is the standard publication used to determine anticipated trips generated by a proposed site. Pocono Manor Investors L.P. proposes to construct a resort development to be known as Pocono Manor Resort & Casino. The proposed development will consist of a resort/casino with 5,000 slots machines, a 300,000 square foot retail village, a 50,000 square foot professional office building, and 425 condominiums/townhouses. In addition to the aforementioned, the resort/casino portion of the development includes the following amenities: hotel rooms/time share villas, pools, spas, convention/meeting rooms, restaurants, theater, retail shops, and a hospitality/gaming school. The Trip Generation manual does not contain data for a resort/casino; however, the ITE Journal has presented data for resort/casino developments throughout the country. Appendix D contains copies of the documents presented by ITE. The data contained in those documents presents trip generation rates per slot machines for a resort/casino.

Given the nature of the development, a conservative 30% interaction reduction was applied to the raw trip generation estimates. Interaction is expected between the retail village, the 'golf villas', the office building and the casino. The developer has stated that the office building will primarily serve residents of Pocono Manor who will have satellite offices in the proposed building and that the retail village will primarily serve the hotel/casino guests. To be further conservative, pass-by trips were not applied to the retail village as it is typically done for a shopping center and it was assumed that the outlying 'golf villas' would generate traffic typical of a year round standard residential community.

Furthermore, non-typical peak hours were studied as a result of the type of development. To estimate trip generation for these non-typical peak hours, the "Columbia Chart" was used for the residential and office components, ITE was used for the shopping center component, and the ITE resort/casino data was used for the resort/casino. All supporting documentation is in Appendix D. Table 2 illustrates the total trips anticipated to be generated by the Pocono Manor Resort & Casino development.

**Table 2 - Pocono Manor Resort & Casino Trip Generation**

December 2005

LAND USE DESIGNATIONS	SIZE/UNITS	MORNING STREET PEAK HOUR		FRIDAY LATE AFTERNOON STREET PEAK HOUR		FRIDAY EVENING CASINO PEAK HOUR		SATURDAY CASINO PEAK HOUR	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Casino/Resort	5,000 Gaming Positions	369	141	1550	1400	1800	1650	1800	1650
Retail Village (Shopping Center)	300,000 Square Feet	185	118	621	672	446	483	446	483
Professional Office	50,000 Square Feet	95	13	23	112	2	5	2	5
Golf Villas (Condos/Townhouses)	425 Units	28	136	132	65	59	37	59	37
Subtotal		677	408	2326	2249	2307	2175	2307	2175
Interaction Reduction	30%	0	0	698	675	692	653	692	653
TOTAL		677	408	1628	1574	1615	1552	1615	1552

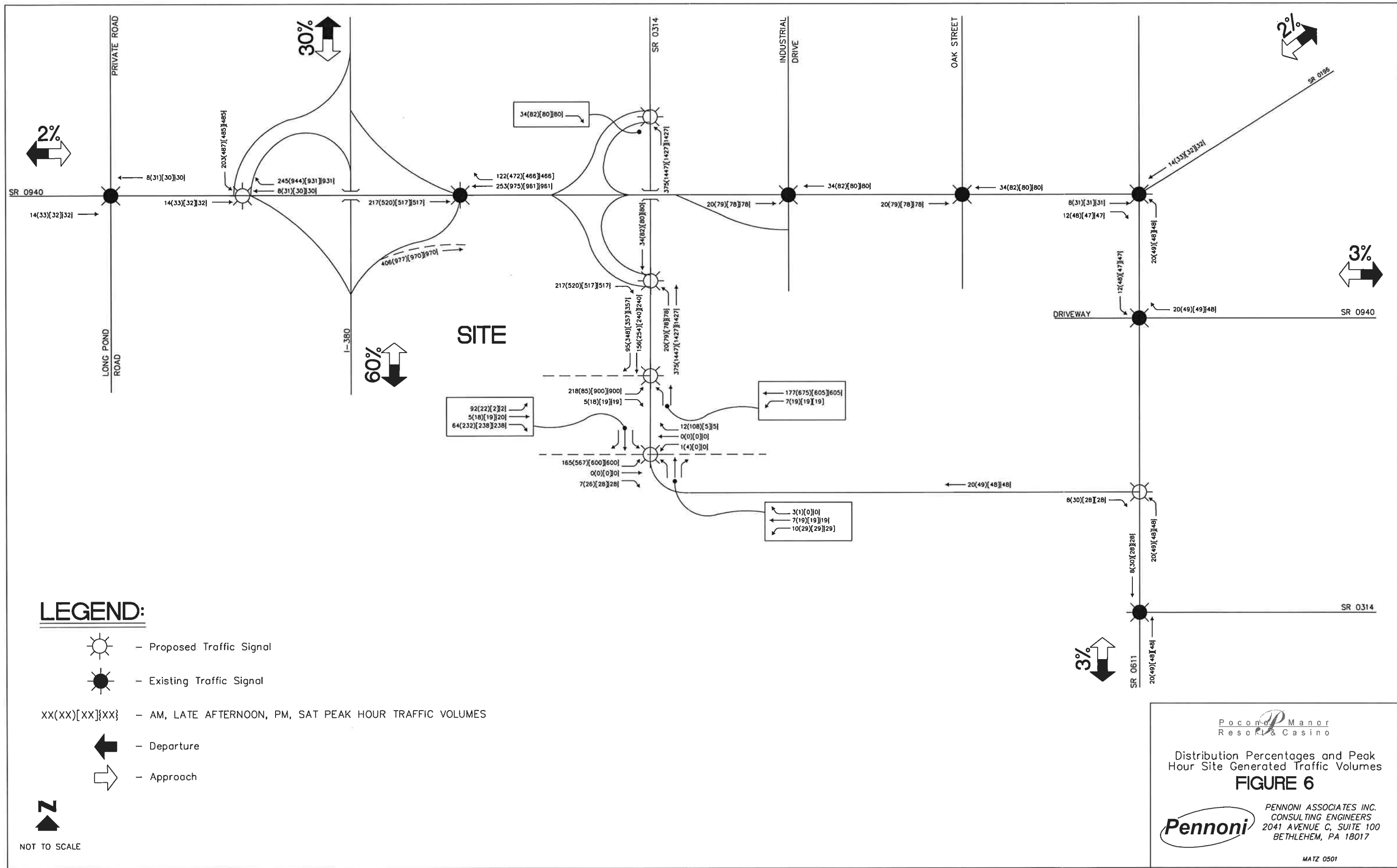
Trips were then assigned to the intersections by examination of current volume distributions; the roadway network; and the location of two major interstate highways, I-380 (north-south) and I-80 (east-west), in the vicinity of the site. Access to the site will be provided via two high volume driveways onto State Route 314 and from northbound I-380 via a modification to the existing northbound off ramp. Furthermore, it is expected that a regional resort/casino of this type, ideally situated along an interstate route, will have a website with directions. These directions will bring guests via the interstate highways. Therefore, it is expected that traffic will arrive and depart the site via the following distribution:

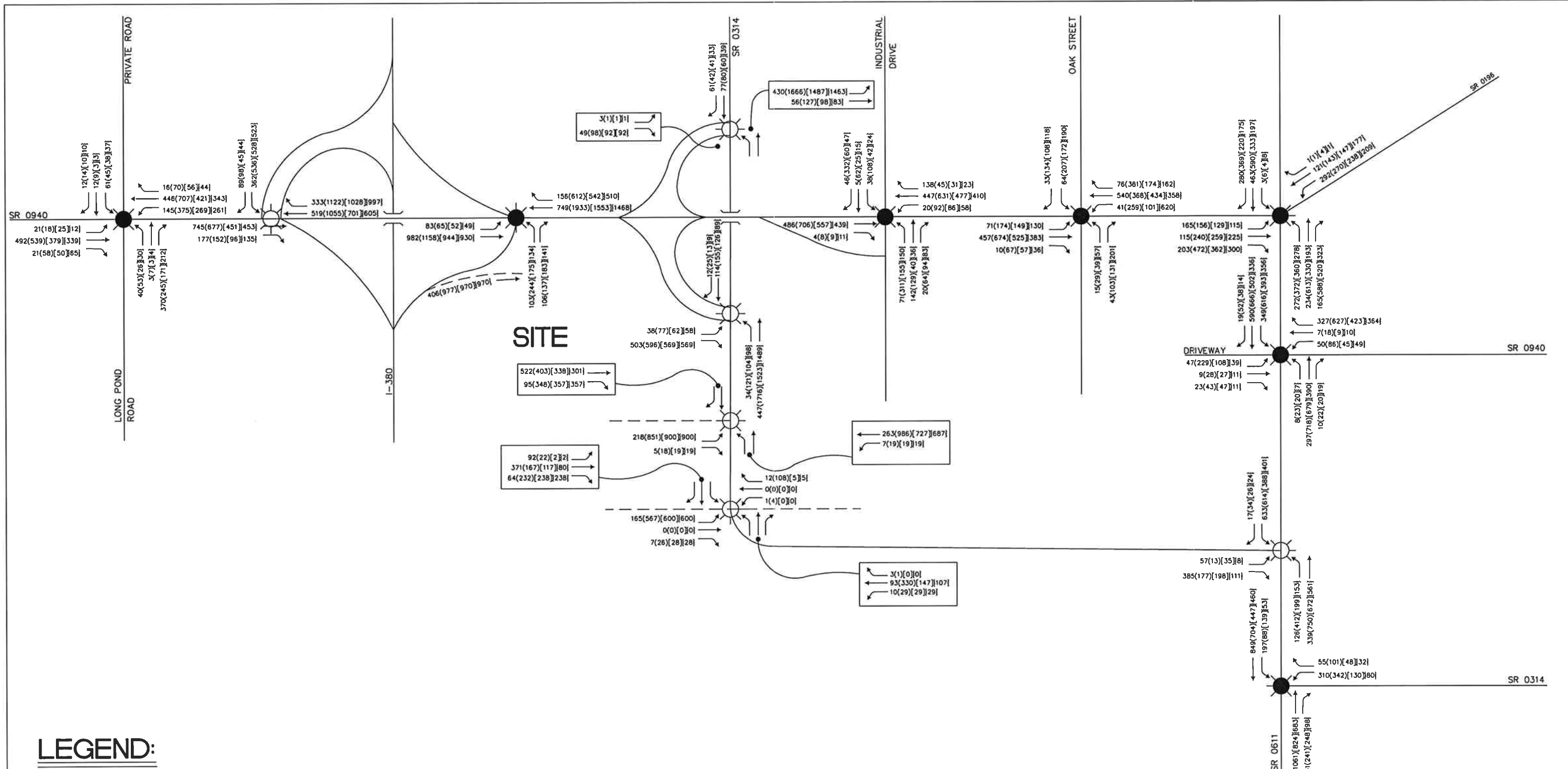
- 60% to/from the south on I-380
- 30% to/from the north on I-380
- 2% to/from the west on SR 0940
- 3% to/from the east on SR 0940
- 2% to/from the north on SR 0196
- 3% to/from the south on SR 0611

Figure 6 illustrates the trip generation assignments.

### **2007 and 2017 BUILD TRAFFIC VOLUMES**

Future 2007 build volumes are shown in Figure 7 and 2017 build volumes are shown in Figure 8. Build volumes were derived by adding the site generated traffic volumes to the no-build traffic volumes for the respective design years.





**LEGEND:**



- Proposed Traffic Signal



- Existing Traffic Signal

XX(XX)[XX]{XX} - AM, LATE AFTERNOON, PM, SAT PEAK HOUR TRAFFIC VOLUMES



NOT TO SCALE

Pocono Manor  
Resort & Casino

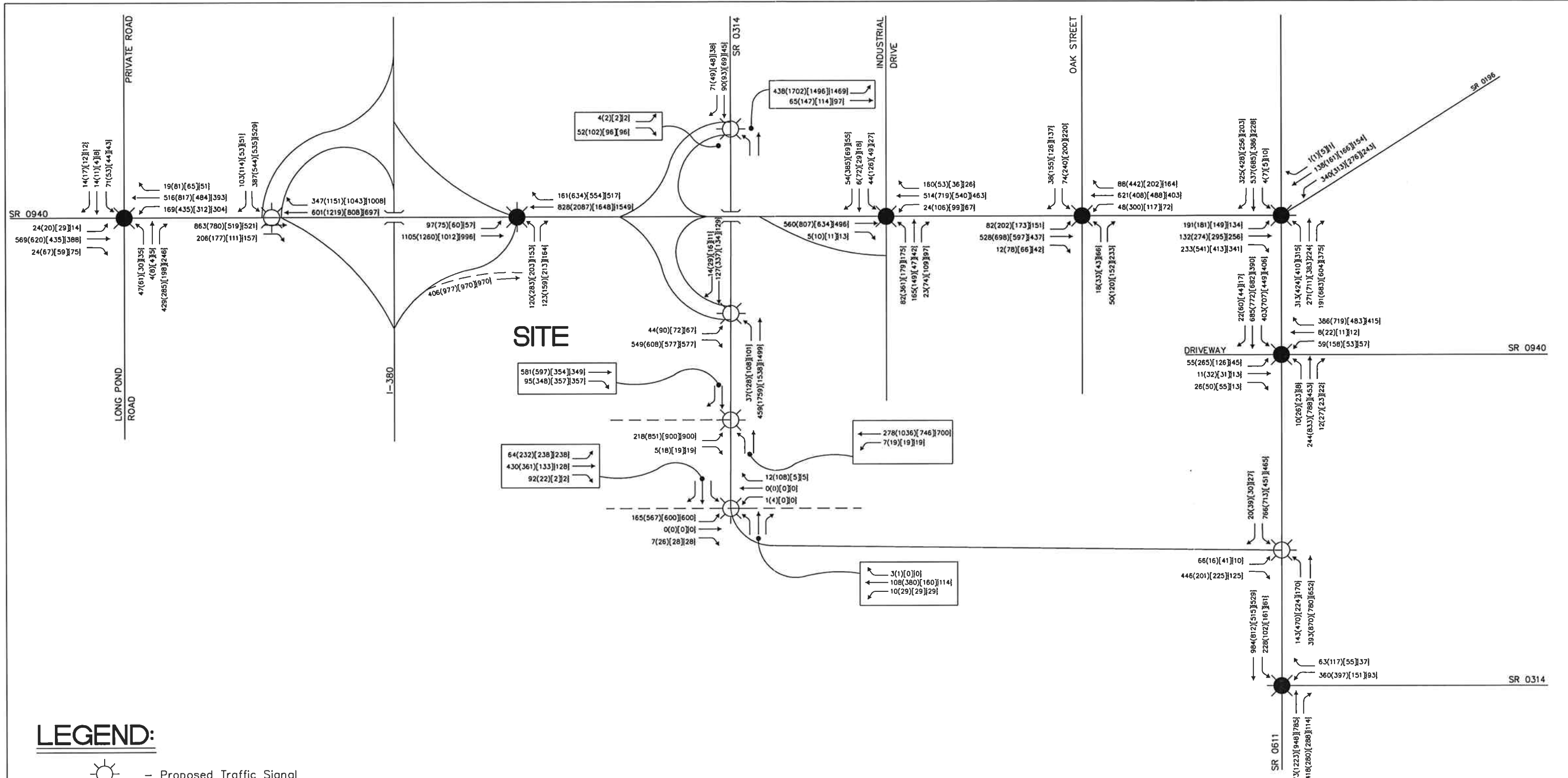
2007 Future Build  
Peak Hour Traffic Volumes

**FIGURE 7**





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**LEGEND:**

-  - Proposed Traffic Signal
-  - Existing Traffic Signal

XX(XX)[XX]{XX} - AM, LATE AFTERNOON, PM, SAT PEAK HOUR TRAFFIC VOLUMES



NOT TO SCALE

  
 2017 Future Build  
 Peak Hour Traffic Volumes  
**FIGURE 8**  
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## OPERATIONAL ANALYSIS

Operations were evaluated at the study intersections. The analyses were performed in accordance with the procedures outlined in the Highway Capacity Manual, Special Report 209, published by the Transportation Research Board, Washington, D.C., using the latest version of the SYNCHRO software. The results of these analyses provide Level of Service, volume/capacity descriptions and average seconds of delay for the intersection movements.

Level of Service (LOS) is a terminology used by the Highway Capacity Manual for assignment and assessment of intersection operation. LOS designations between “A” and “F” are used; LOS A defines a very good operation with no congestion or delay, while LOS F defines a poor operation with substantial delay and congestion. The definitions of Levels of Service “A” through “F” for both signalized and unsignalized intersections are contained in Appendix E.

The analyses were conducted for four time periods; the AM peak hour, the Friday late afternoon street peak hour, the Friday evening casino peak hour and the Saturday evening casino peak hour. Figures 9 through 13 illustrate the levels of service for all study conditions. Summaries of all the capacity analyses results are included in Appendix F.

Following are operational characteristics for each of the study intersections.

### SR 0940 and Long Pond Road/Private Road

**2005 Existing:** At this four leg signalized intersection, all approaches operate at LOS C or better during all peak hours studied with the exception of the westbound left turn movement during the late afternoon peak hour which operates at LOS E.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development, all approaches are expected to operate at LOS C or better during all peak hours analyzed with signal timing optimization provided.

**2017 No-Build:** Without the proposed development, some approaches are expected to operate at LOS D during the late afternoon peak hour, specifically, the eastbound left turn movement, the southbound approach and the westbound through/right turn movement.

**2007 Build:** Upon completion of the Pocono Manor Resort & Casino development, some level of service drops are expected. In order to provide better traffic flow through the intersection and mitigate some of the level of service drops, a northbound right turn lane is proposed for Long Pond Road. The right turn movement from northbound Long Pond Road onto eastbound SR 0940 is a heavy movement particularly during the morning peak hour. With this improvement, all levels of service are expected to be C or better.

**2017 Build:** As in the 2007 build scenario, with the addition of the northbound right turn lane from Long Pond Road onto eastbound SR 0940, levels of service are improved.

#### **SR 0940 and Southbound I-380 Ramps**

**2005 Existing:** This unsignalized intersection's side street currently operates at LOS F during the AM and late afternoon peak hours. This intersection currently meets PENNDOT Publication 201, Traffic and Engineering Studies guideline for signalization based on peak hour traffic volumes.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development, the side street is expected to continue to operate at LOS F during the AM and late afternoon peak hour.

**2017 No-Build:** As in 2007 without the proposed development, the side street is expected to continue operate at LOS F.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, the side street is expected to continue to operate at LOS F. To provide better traffic flow to the area, it is proposed to signalize the intersection and provide dual left turn lanes from the Southbound I-380 Off Ramp. With these improvements in place, all levels of service for all movements are expected to be C or better.

**2017 Build:** With the addition of the proposed Pocono Manor Resort & Casino site generated traffic, the intersection is expected to continue to operate at levels of service C or better with the improvements mentioned above.

#### **SR 0940 and Northbound I-380 Ramps**

**2005 Existing:** This signalized intersection's northbound approach currently operates at LOS D during the Friday peak hours. All other movements operate at LOS A or B.

**2007 No-Build:** Without the development and signal optimization, all movements are expected to operate at LOS C or better during all peak hours analyzed.

**2017 No-Build:** As in 2007, without the proposed development and signal optimization, all movements are expected to operate at LOS C or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, the off ramp is expected to operate at LOS F. To provide better levels of service and improve traffic flow in the area, it is proposed to redesign the Northbound I-380 Off Ramp to provide a slip ramp directly into the site. By providing this slip ramp, as well as optimizing signal phasing and timing, all movements at the intersection are expected to operate at LOS D or better during all peak hours analyzed.

**2017 Build:** As in 2007, by providing the slip ramp, all movements at the intersection are expected to operate at LOS D or better during all peak hours analyzed.

#### **SR 0314 and Westbound 0940 Ramps**

**2005 Existing:** This unsignalized intersection currently operates at LOS C or better during all peak hours analyzed.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS C or better during all peak hours analyzed.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS C or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, the Westbound SR 0940 Off Ramp is expected to operate at LOS F. To mitigate the level of service drops, it is proposed to signalize the intersection and provide dual left turn lanes from northbound SR 0314 onto westbound SR 0940. With this improvement in place, all movements are expected to operate at level of service D or better during all peak hours analyzed.

**2017 Build:** As in 2007, with the proposed signalization of the intersection and the provision of dual left turn lanes from northbound SR 0314 onto westbound SR 0940, all movements are expected to operate at level of service D or better during all peak hours analyzed.

### **SR 0314 and Eastbound 0940 Ramps**

**2005 Existing:** This unsignalized intersection currently operates at LOS B or better during all peak hours analyzed.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS B or better during all peak hours analyzed.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS B or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, the Eastbound SR 0940 Off Ramp is expected to operate at LOS F. To mitigate the level of service drops, it is proposed to signalize the intersection. With this improvement in place, all movements are expected to operate at level of service D or better during all peak hours analyzed.

**2017 Build:** As in 2007, with the proposed signalization of the intersection, all movements are expected to operate at level of service D or better during all peak hours analyzed.

### **SR 0940 and Industrial Drive**

**2005 Existing:** This signalized intersection currently operates at LOS D or better during all peak hours analyzed, with the exception of the eastbound through/right turn movement during the late afternoon peak hour which operates at LOS E.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to operate at LOS D or better during all peak hours analyzed.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2017 Build:** As in 2007, without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

### **SR 0940 and Oak Street**

**2005 Existing:** This signalized intersection currently operates at LOS D or better during all peak hours analyzed.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to operate at LOS D or better during all peak hours analyzed.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2017 Build:** As in 2007, without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

### **SR 0940/SR 0611/SR 0196 and Driveway**

**2005 Existing:** This signalized intersection currently operates at LOS F during all peak hours analyzed.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development and the geometric/signal improvements mentioned under the Planned Roadway Improvements section of this report, this intersection is expected to improve in its operation; however, LOS F are still expected for some movements.

**2017 No-Build:** As in 2007, without the proposed Pocono Manor Resort & Casino development and the geometric/signal improvements mentioned under the Planned Roadway Improvements section of this report, this intersection is expected to improve in its operation; however, LOS F are still expected for some movements.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, this intersection is expected to continue to operate with some movements at LOS F. With the additional site traffic added to this intersection, even though it is less than 50 directional trips, some level of service drops are expected. It is proposed that a fair share contribution be made for the construction of additional lanes at this intersection.

**2017 Build:** As in 2007, with the proposed Pocono Manor Resort & Casino development, this intersection is expected to continue to operate with some movements at LOS F. It is proposed that a fair share contribution be made for the construction of additional lanes at this intersection.

#### **SR 0611 and SR 0314 (West leg)**

**2005 Existing:** This unsignalized intersection currently operates at LOS F during the morning peak hour. This intersection currently meets PENNDOT Publication 201, Traffic and Engineering Studies guideline for signalization based on peak hour traffic volumes.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS F during the morning peak hours.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS F during the morning peak hours and during the late afternoon peak hour.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS F. It is proposed to signalize this

intersection to mitigate levels of service drops and improve traffic flows in the area. With signalization, all movements are expected to operate at LOS C or better.

**2017 Build:** As in 2007, with the proposed Pocono Manor Resort & Casino development, this unsignalized intersection is expected to continue to operate at LOS F. It is proposed to signalize this intersection to mitigate levels of service drops and improve traffic flows in the area. With signalization, all movements are expected to operate at LOS C or better.

**SR 0611 and SR 0314 (East leg)**

**2005 Existing:** This signalized intersection currently operates at LOS C or better during all peak hours analyzed, with the exception of the westbound left turn movement during the late afternoon peak hour which operates at LOS E.

**2007 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to operate at LOS D or better during all peak hours analyzed.

**2017 No-Build:** Without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2007 Build:** With the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.

**2017 Build:** As in 2007, without the proposed Pocono Manor Resort & Casino development and signal optimization, this intersection is expected to continue to operate at LOS D or better during all peak hours analyzed.



### **SR 0940 and Site Driveway A**

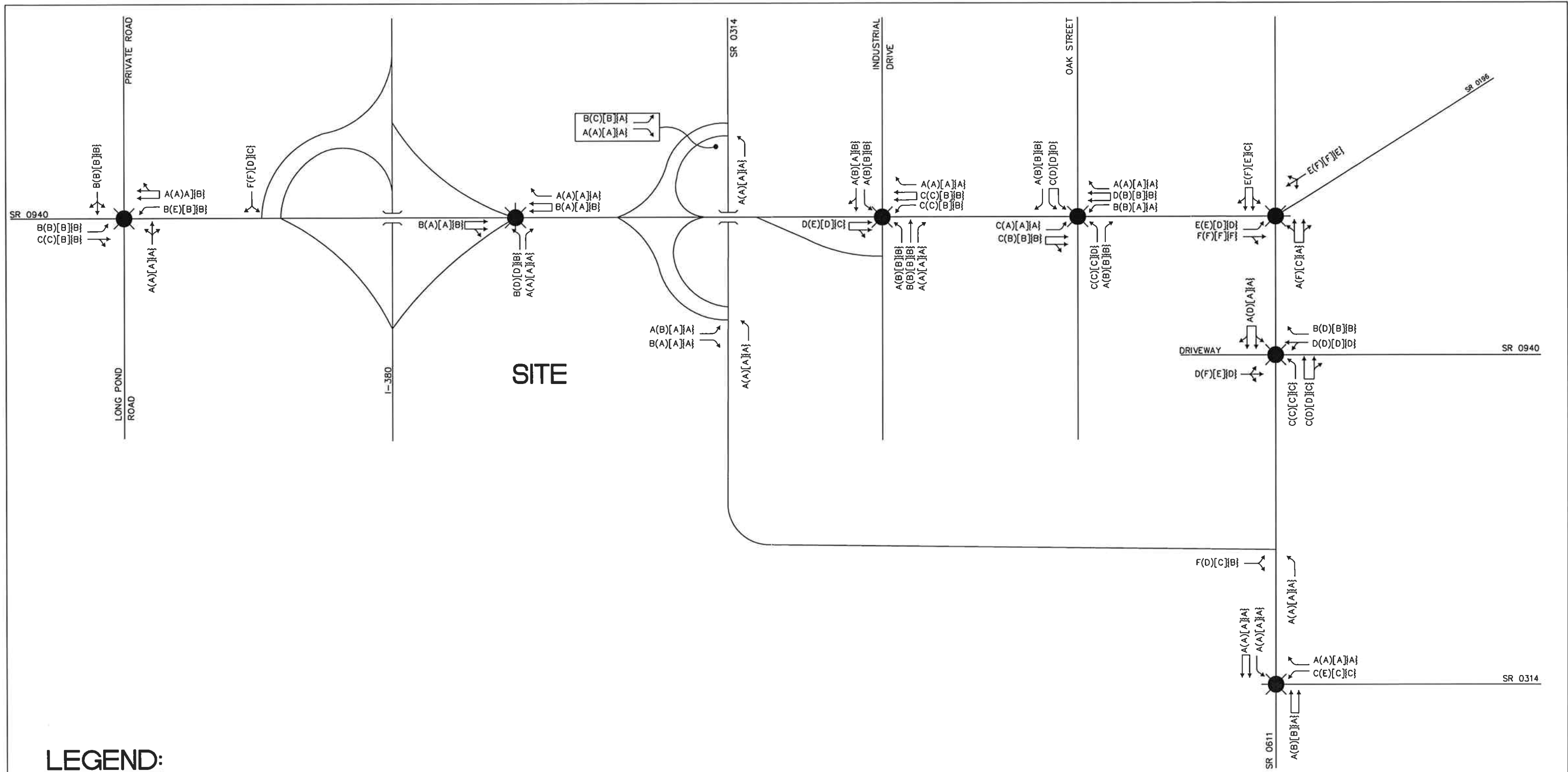
**2007 Build:** Upon completion of the Pocono Manor Resort & Casino development, the site driveway is expected to operate at LOS C or better during all peak hours analyzed. It is proposed to provide dual left turn lanes and a right turn lane out of the site and exclusive right and left turn lanes into the site. Two through lanes in each direction on SR 0314 are also proposed.

**2017 Build:** With the configuration mentioned above, the site driveway is expected to operate at LOS D or better during all peak hours analyzed.

### **SR 0940 and Site Driveway B**

**2007 Build:** Upon completion of the Pocono Manor Resort & Casino development, the site driveway is expected to operate at LOS D or better during all peak hours analyzed. It is proposed to provide dual left turn lanes, a through lane and a right turn lane out of the site and exclusive right and left turn lanes into the resort/casino section of the site. Opposite the resort/casino driveway will be the professional office driveway. This driveway is proposed to have a single lane. Two through lanes in each direction are proposed for SR 0314.

**2017 Build:** With the configuration mentioned above, the site driveway is expected to operate at LOS D or better during all peak hours analyzed.



**LEGEND:**

- Existing Traffic Signal
- A(A)[A][A] - AM, LATE AFTERNOON, PM, SAT PEAK HOUR LEVELS OF SERVICE



NOT TO SCALE

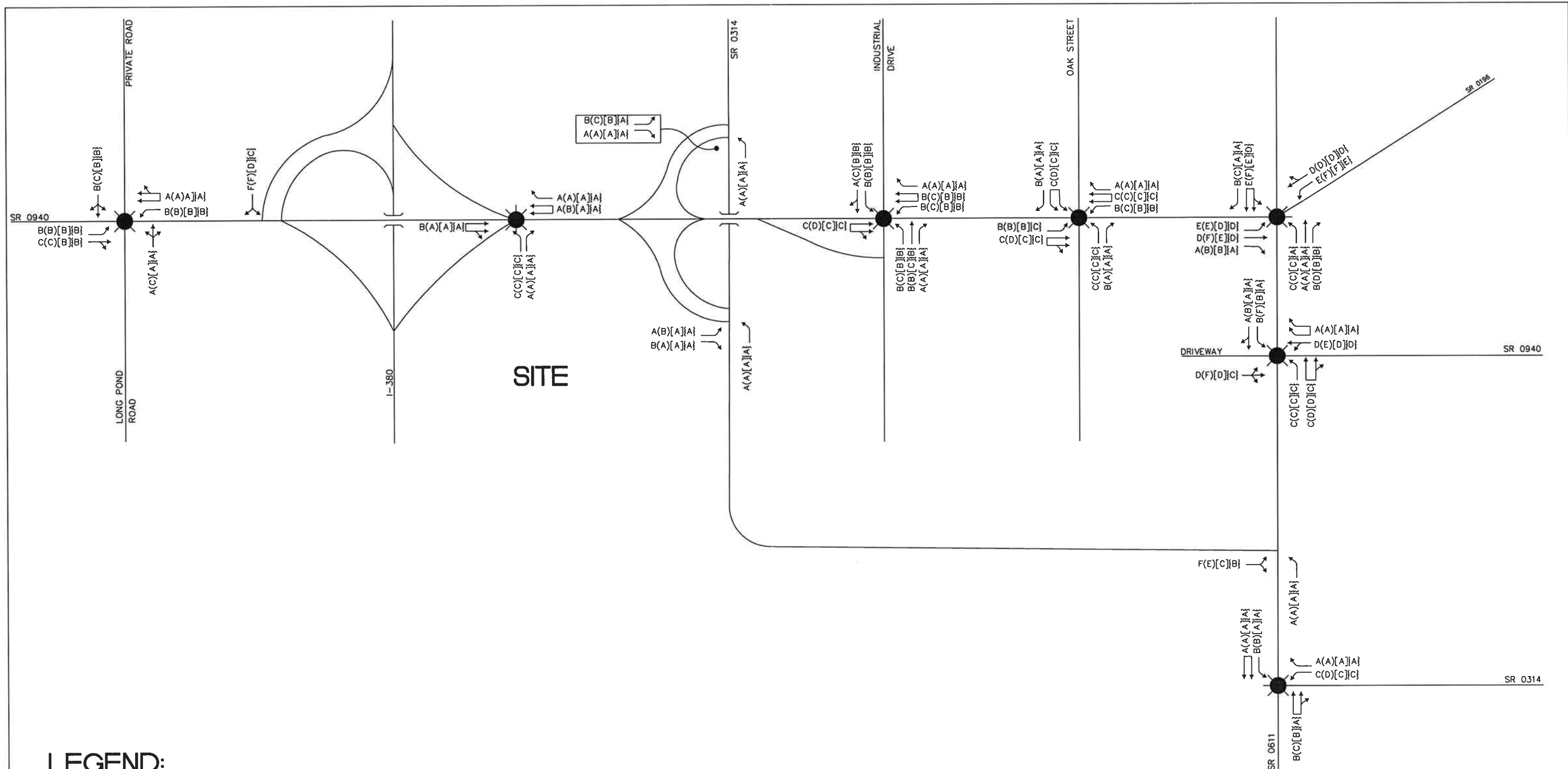
Pocono Manor  
Resort & Casino

2005 Existing Peak Hour  
Levels of Service


**FIGURE 9**

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BETHLEHEM, PA 18017

MATZ 0501

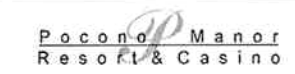



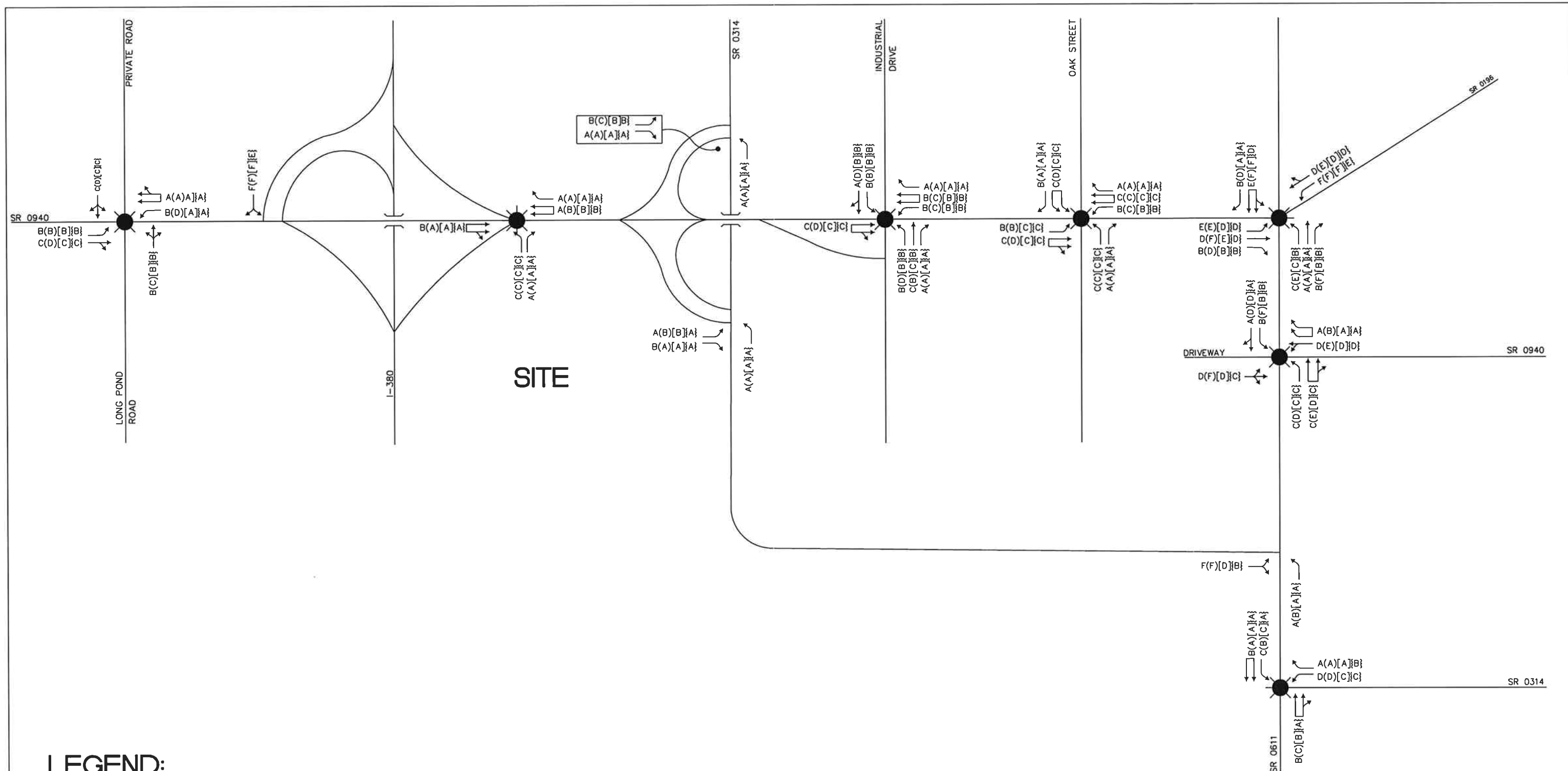
**LEGEND:**

-  - Existing Traffic Signal
- A(A)[A][A] - AM, LATE AFTERNOON, PM, SAT PEAK HOUR LEVELS OF SERVICE



NOT TO SCALE

  
 2007 Future No-Build  
 Peak Hour Levels of Service  
**FIGURE 10**  
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 BETHLEHEM, PA 18017  
 MATZ 0501



**LEGEND:**

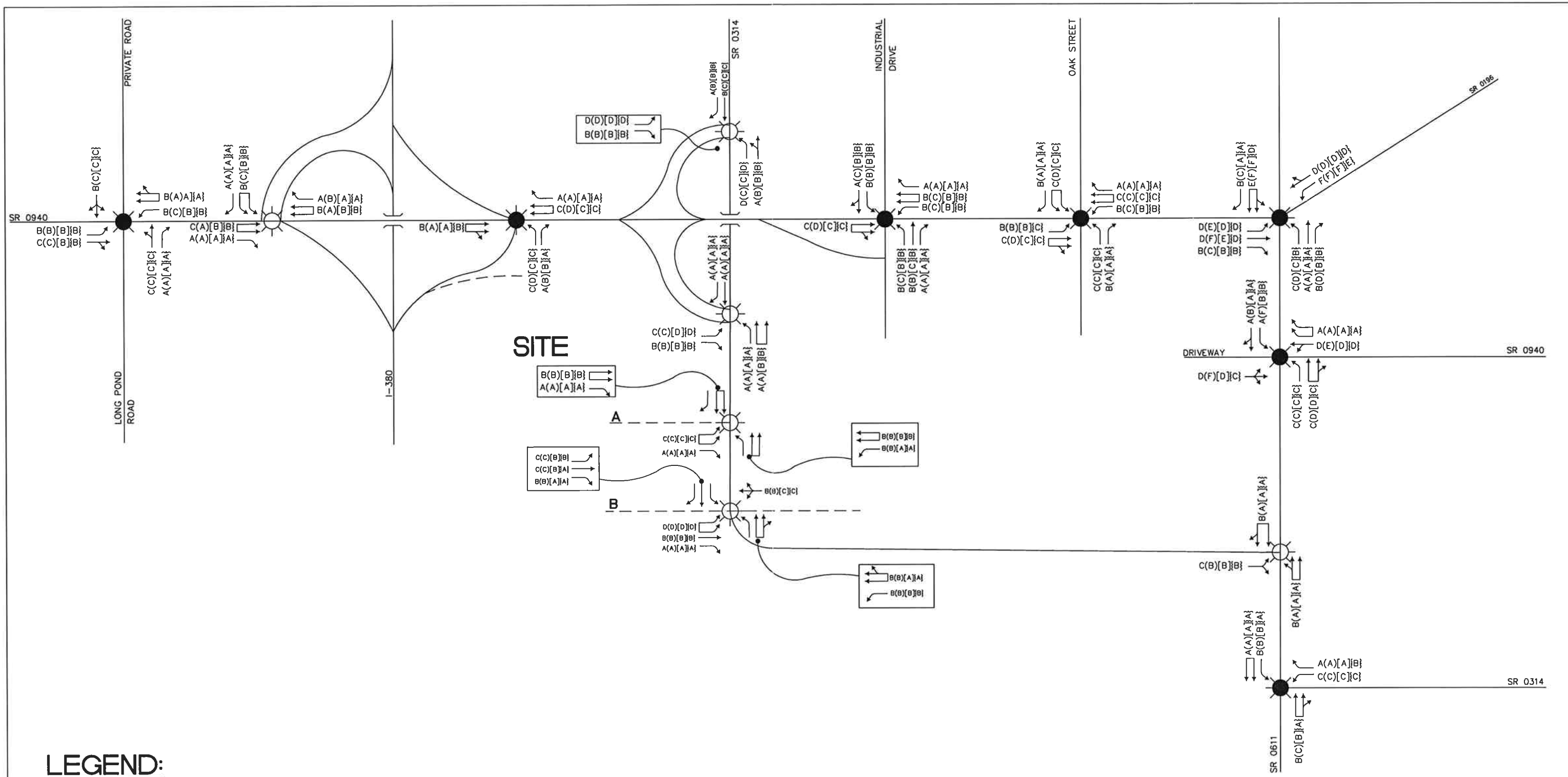
- Existing Traffic Signal

A(A)[A][A] - AM, LATE AFTERNOON, PM, SAT PEAK HOUR LEVELS OF SERVICE





NOT TO SCALE

2017 Future No-Build  
 Peak Hour Levels of Service  
**FIGURE 11**  
 PENNONI ASSOCIATES INC.  
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 2041 AVENUE C, SUITE 100  
 BETHLEHEM, PA 18017  
 MATZ 0501





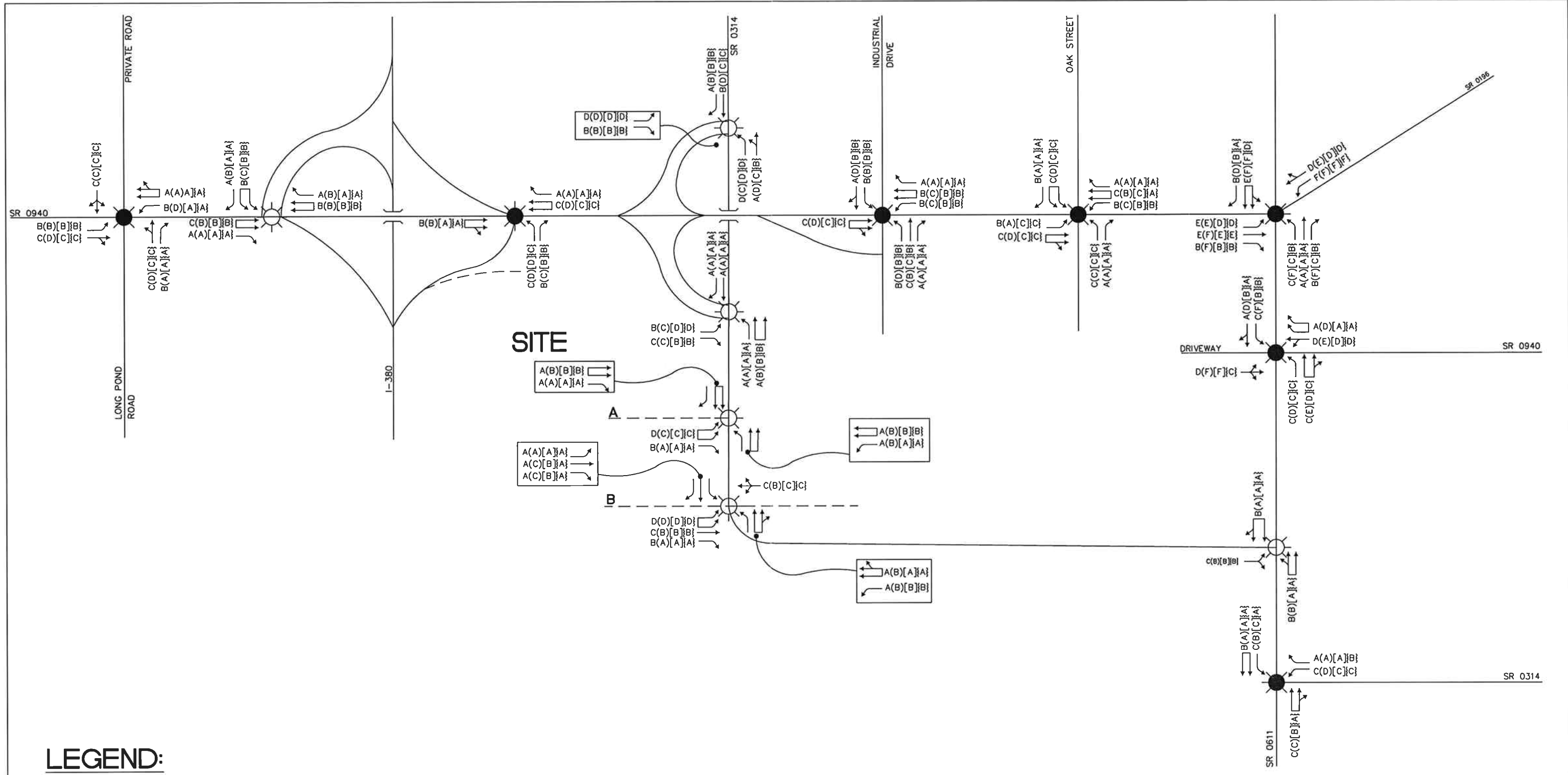
**LEGEND:**

-  - Proposed Traffic Signal
-  - Existing Traffic Signal
- A(A)[A][A] - AM, LATE AFTERNOON, PM, SAT PEAK HOUR LEVELS OF SERVICE





NOT TO SCALE

  
 2007 Future Build  
 Peak Hour Levels of Service  
**FIGURE 12**  
 PENNONI ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 2041 AVENUE C, SUITE 100  
 BETHLEHEM, PA 18017  
 MATZ 0501



**LEGEND:**

-  - Proposed Traffic Signal
-  - Existing Traffic Signal
- A(A)[A]{A} - AM, LATE AFTERNOON, PM, SAT PEAK HOUR LEVELS OF SERVICE



NOT TO SCALE

  
 2017 Future Build  
 Peak Hour Levels of Service  
**FIGURE 13**  
 PENNONI ASSOCIATES INC.  
 CONSULTING ENGINEERS  
 2041 AVENUE C, SUITE 100  
 BETHLEHEM, PA 18017  
 MATZ 0501

## CONCLUSIONS

Trip Generation for the proposed development resulted in a total of 1,085 trips for the AM peak hour, 3,202 trips for the Friday late afternoon peak hour, 3,167 trips for the Friday evening peak hour and 3,167 trips for the Saturday evening peak hour. To accommodate the additional traffic to the area roadways, the following off site improvements are proposed:

### **SR 0940/Long Pond Road/Private Road**

- Northbound right turn lane

### **SR 0940/Southbound I-380 Off Ramp**

- Signalization
- Dual left turn lanes for Southbound Off Ramp

### **SR 0940/Northbound I-380 Off Ramp**

- Signal phasing and timing

### **SR 0314/SR 0940 Westbound Ramps**

- Signalization
- Dual left turn lanes northbound on SR 0314

### **SR 0314/SR 0940 Eastbound Ramps**

- Signalization
- Additional through lane northbound on SR 0314

### **SR 0940/Industrial Drive**

- Signal timing

### **SR 0940/Oak Street**

- Signal timing

### **SR 0940/SR 0611/SR 0193/Driveway**

- Contribution towards construction

### **SR 0611/SR 0314 (West leg)**

- Signalization

### **SR 0611/SR 0314 (East leg)**

- Signal Timing

Two study years were evaluated: 2007 (the year of opening) and 2017 (the ten-year buildout). Table 1 on pages 7 through 9 summarizes the levels of service for the study intersections for both

study years. As can be seen, although some level of service drops are expected, the proposed offsite improvements mitigate most of the drops. Where mitigation is not proposed, a fair share contribution to the affected municipality is proposed.

Given the conservative approach to the traffic analysis and the ideal location along Interstate Route 380 and State Route 940, the Pocono Manor Resort & Casino development traffic can be adequately accommodated by the existing roadway network with the improvements mentioned above.



***TRAFFIC IMPACT STUDY***

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**APPENDIX A**

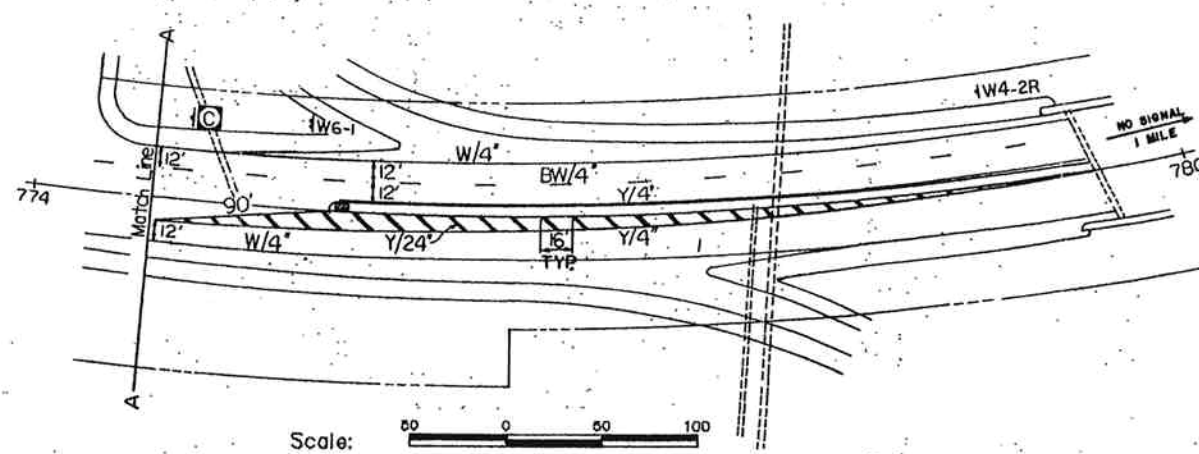
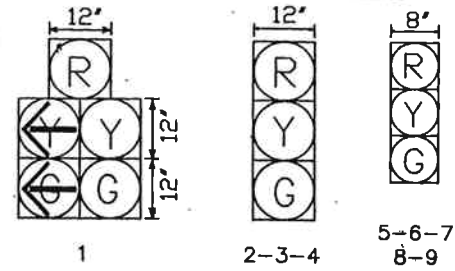
**Traffic Signal Permit Plans**

PHASING, TIMING and COLOR SEQUENCE CHART

SIGNALS	PHASE 1		PHASE 2			PHASE 3			PHASE 4		FLASHING OPERATION
	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS		
1	G	Y	G	Y	R	R	R	R		Y	
2	G	G	G	Y	R	R	R	R		Y	
3-4	R	R	G	Y	R	R	R	R		Y	
5-6-9	R	R	R	R	R	G	Y	R		R	
7-8	R	R	R	R	R	G	Y	R		R	
FIXED		5	5	2		4	2				
MINIMUM PASSAGE	3										
MAXIMUM 1	9		26								
MAXIMUM 2	9		33								
MAXIMUM 3	17		32								
MEMORY	NL		MR			NL					

- ① EMERGENCY FLASHING OPERATION
- ② PHASE 1 TO FOLLOW PHASE 3 ONLY

SIGNAL INDICATIONS



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE	SR 940		
TOBYHANNA TOWNSHIP				
PERMIT NO. 45-215-4		SHEET 2 OF 2		
DATE ISSUED 8-9-91		DATE REVISED *10/29/03		
*CONDITION DIAGRAM ONLY				

GENERAL NOTES

Installation, operation and maintenance of this traffic signal to be in accordance with Pennsylvania Department of Transportation Regulations on Official Traffic Control Devices.

No modifications of this installation are permitted unless prior approval is granted, in writing, by the Department.

All maintenance necessary for proper visibility of the signals, including trimming trees, is the responsibility of the Permittee.

All signs and pavement markings indicated on this drawing are considered part of the permit and are to be installed and maintained by the Permittee, unless otherwise indicated, except the longitudinal pavement markings on State highways which will be maintained by the Department.

Install post mounted signals with the signal heads a minimum of 2 feet behind the face of the curb or edge of the shoulder. Support poles for overhead signals will have a minimum horizontal clearance of 2 feet.

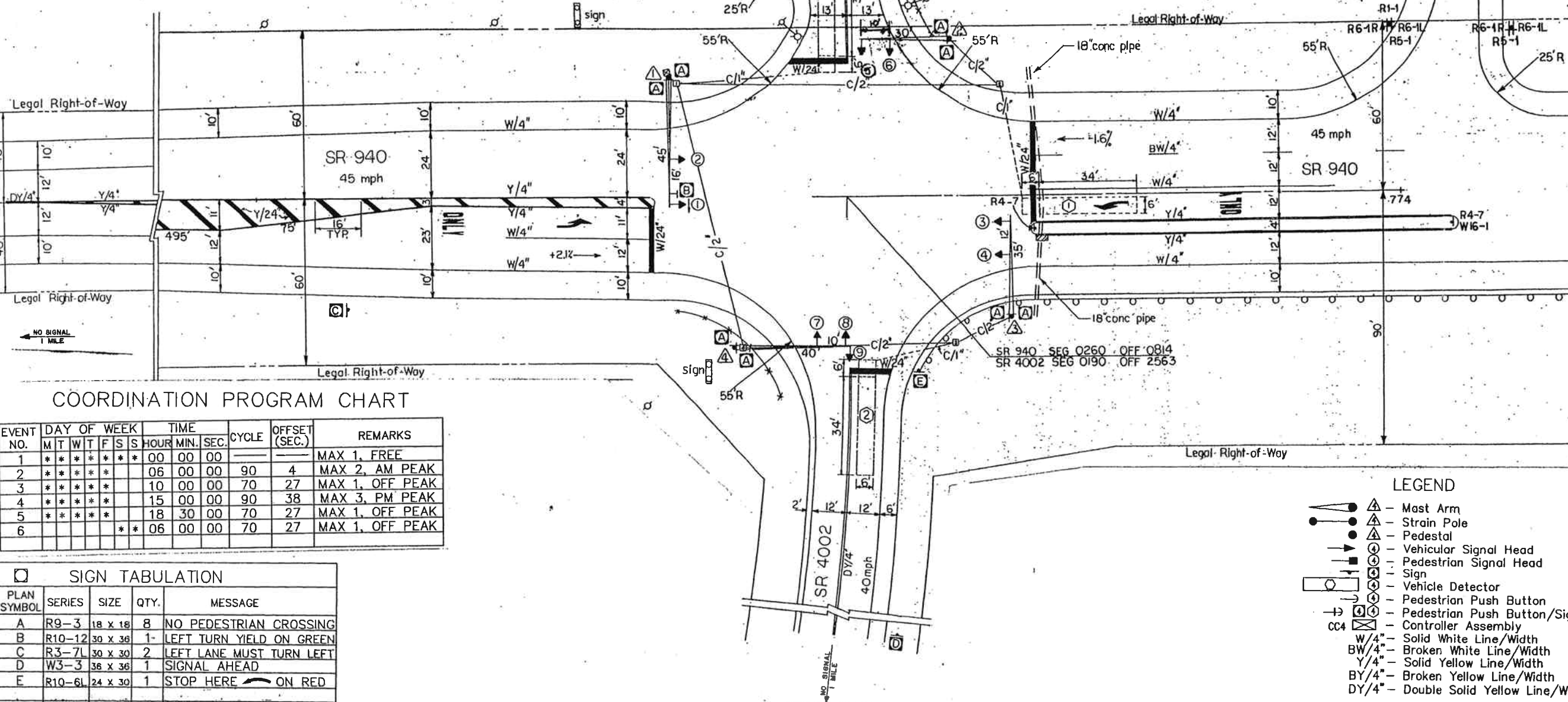
The bottom of signal heads and signs erected over the roadway are not to be less than 15 feet nor more than 19 feet above the roadway. The bottom of post mounted signal heads are to be not less than 8 feet nor more than 15 feet above the sidewalk or pavement grade.

The minimum horizontal distance between signal heads measured at right angles to the approach is to be 8 feet.

In addition to this signal permit, the Permittee will obtain a Highway Occupancy Permit prior to any openings being made in or under any portion of a State Highway.

This drawing cannot be used as a construction drawing unless the Permittee complies with the provisions of Act 172, Prevention of Damage to Underground Utilities. Prior to construction consult with utility companies to resolve any problems which may be created due to the location of utilities.

Place pavement markings in accordance with the Department of Transportation Pavement Marking Handbook.



COORDINATION PROGRAM CHART

EVENT NO.	DAY OF WEEK	TIME	CYCLE	OFFSET (SEC.)	REMARKS
1	** ** ** ** *	00 00 00			MAX 1, FREE
2	** ** ** ** *	06 00 00	90	4	MAX 2, AM PEAK
3	** ** ** ** *	10 00 00	70	27	MAX 1, OFF PEAK
4	** ** ** ** *	15 00 00	90	38	MAX 3, PM PEAK
5	** ** ** ** *	18 30 00	70	27	MAX 1, OFF PEAK
6	** ** ** ** *	06 00 00	70	27	MAX 1, OFF PEAK

SIGN TABULATION				
PLAN SYMBOL	SERIES	SIZE	QTY.	MESSAGE
A	R9-3	18 x 18	8	NO PEDESTRIAN CROSSING
B	R10-12	30 x 36	1	LEFT TURN YIELD ON GREEN
C	R3-7L	30 x 30	2	LEFT LANE MUST TURN LEFT
D	W3-3	36 x 36	1	SIGNAL AHEAD
E	R10-6L	24 x 30	1	STOP HERE ON RED

- LEGEND
- ▲ - Mast Arm
  - △ - Strain Pole
  - - Pedestal
  - - Vehicular Signal Head
  - - Pedestrian Signal Head
  - - Vehicle Detector
  - - Pedestrian Push Button
  - - Pedestrian Push Button/Sign
  - CC4 - Controller Assembly
  - W/4 - Solid White Line/Width
  - BW/4 - Broken White Line/Width
  - Y/4 - Solid Yellow Line/Width
  - BY/4 - Broken Yellow Line/Width
  - DY/4 - Double Solid Yellow Line/Width

County: MONROE

Municipality: TOBYHANNA TOWNSHIP

Intersection: S.R. 940 AND S.R. 4002 (LONG POND ROAD)

Reviewed: [Signature] 6/20/03 Date

Municipal Official

Reviewed: [Signature] 6/20/03 Date

District Traffic Signals Div.

Recommended: [Signature] 6/20/03 Date

District Traffic Engineer

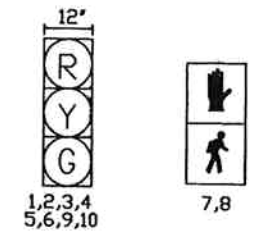
Scale: 20 0 20 40

PHASING, TIMING and COLOR SEQUENCE CHART

SIGNALS	PHASE 2+6				PHASE 4				EMERGENCY FLASHING OPERATION
	1	2	3	4	5	6	7	8	
1,2,9	G	G	Y	R	R	R	R	R	Y
3,4,10	G	G	Y	R	R	R	R	R	Y
5,6	R	R	R	R	G	Y	R	R	R
7,8	M	FH	FH	H	H	H	H	H	OFF
FIXED MIN GREEN	4.5		2		4.5		2		
PASSAGE					3				
MAX 1	29		28						
MAX 2	40		37						
MAX 3	42		35						
MAX 4	20		17						
* PED MEM	7		17		MR		NL		

\* UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND AT ALL TIMES

SIGNAL INDICATIONS

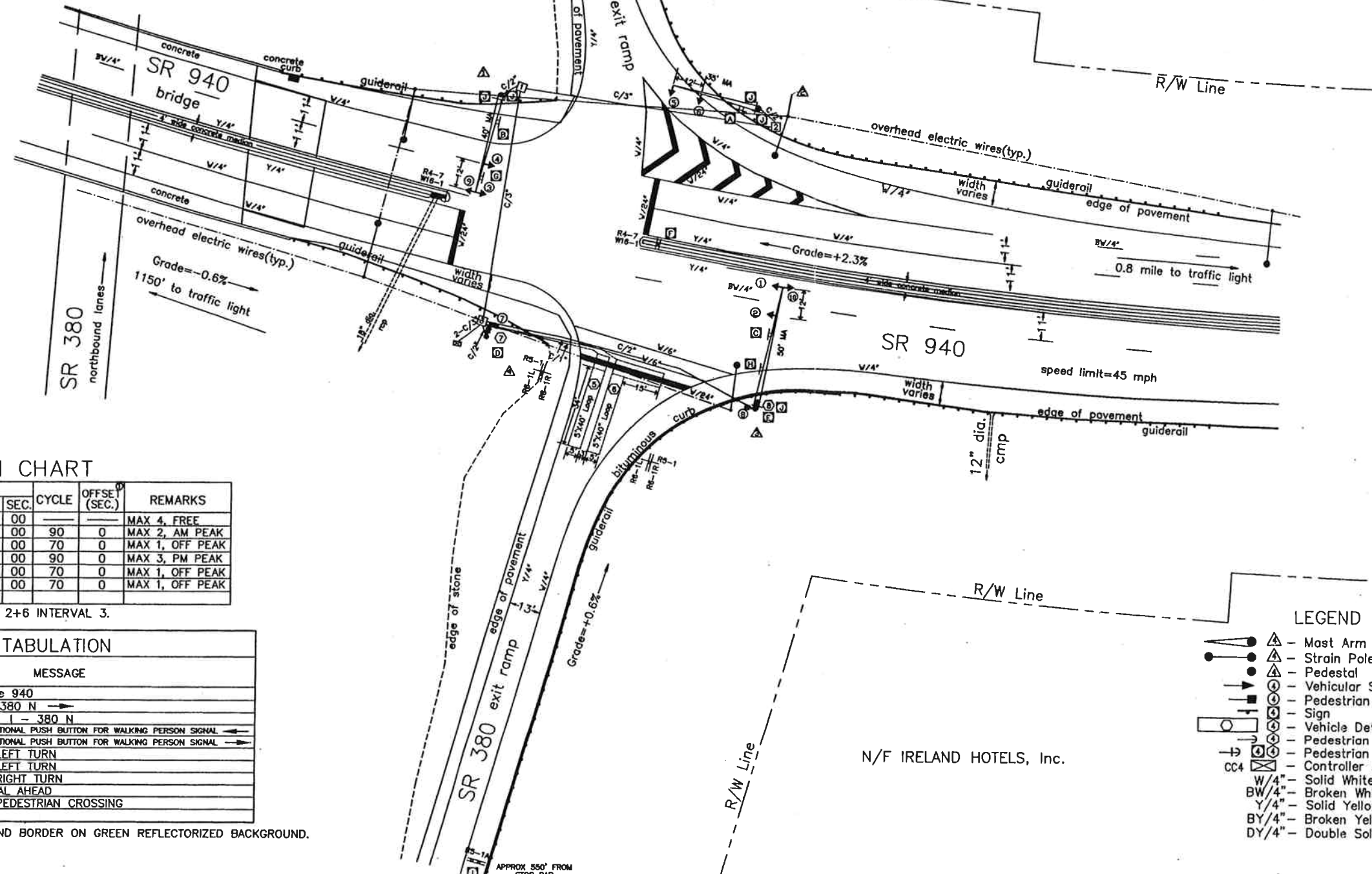


SIGNAL HEADS 1,2,3,4,5,6,9,10 SHALL BE EQUIPPED WITH BACKPLATES.  
ALL SIGNAL HEADS SHALL HAVE LED'S

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE			
TOBYHANNA TOWNSHIP				
PERMIT NO. 45-215-009		SHEET 2 OF 2		
DATE ISSUED 7-7-03		DATE REVISED		

GENERAL NOTES

Installation, operation and maintenance of this traffic signal to be in accordance with Pennsylvania Department of Transportation Regulations on Official Traffic Control Devices.  
No modifications of this installation are permitted unless prior approval is granted, in writing, by the Department.  
All maintenance necessary for proper visibility of the signals, including trimming trees, is the responsibility of the Permittee.  
All signs and pavement markings indicated on this drawing are considered part of the permit and are to be installed and maintained by the Permittee, unless otherwise indicated, except the longitudinal pavement markings on State highways which will be maintained by the Department.  
Install post mounted signals with the signal heads a minimum of 2 feet behind the face of the curb or edge of the shoulder. Support poles for overhead signals will have a minimum horizontal clearance of 2 feet.  
The bottom of signal heads and signs erected over the roadway are not to be less than 15 feet nor more than 19 feet above the roadway. The bottom of post mounted signal heads are to be not less than 8 feet nor more than 15 feet above the sidewalk or pavement grade.  
The minimum horizontal distance between signal heads measured at right angles to the approach is to be 8 feet.  
In addition to this signal permit, the Permittee will obtain a Highway Occupancy Permit prior to any openings being made in or under any portion of a State Highway, if applicable.  
This drawing cannot be used as a construction drawing unless the Permittee complies with the provisions of Act 187, Prevention of Damage to Underground Utilities. Prior to construction consult with utility companies to resolve any problems which may be created due to the location of utilities.  
Place pavement markings in accordance with the Department of Transportation Pavement Marking Handbook, Standards Series 7600.  
Maintenance and protection of traffic for the installation and maintenance of this traffic signal to be in accordance with Publication 203, Work Zone Traffic Control.



PROGRAM CHART

EVENT NO.	DAY OF WEEK	TIME		CYCLE	OFFSET (SEC.)	REMARKS
		HOUR	MIN. SEC.			
1	* * * * *	00	00 00	90	0	MAX 4, FREE
2	* * * * *	06	00 00	70	0	MAX 2, AM PEAK
3	* * * * *	10	00 00	70	0	MAX 1, OFF PEAK
4	* * * * *	15	00 00	90	0	MAX 3, PM PEAK
5	* * * * *	18	30 00	70	0	MAX 1, OFF PEAK
6	* * * * *	06	00 00	70	0	MAX 1, OFF PEAK

⊕ OFFSET REFERENCED TO PHASE 2+6 INTERVAL 3.

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	QTY.	MESSAGE
* A	D3-4	78x16	1	Route 940
* B	D3-4	96x16	1	I - 380 N
* C	D3-4	96x16	1	I - 380 N
D	R10-3B	12x9	1	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL
E	R10-3B	12x9	1	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON SIGNAL
F	R3-2	24x24	1	NO LEFT TURN
G	R3-2	30x30	1	NO LEFT TURN
H	R3-1	30x30	1	NO RIGHT TURN
I	W3-3	48x48	1	SIGNAL AHEAD
J	R9-3A	24x24	6	NO PEDESTRIAN CROSSING

\* WHITE REFLECTORIZED LEGEND AND BORDER ON GREEN REFLECTORIZED BACKGROUND.

LEGEND

- ▲ - Mast Arm
- ▲ - Strain Pole
- - Pedestal
- - Vehicular Signal Head
- - Pedestrian Signal Head
- - Sign
- - Vehicle Detector
- - Pedestrian Push Button
- - Pedestrian Push Button/Sign
- CC4 - Controller Assembly
- W/4" - Solid White Line/Width
- BW/4" - Broken White Line/Width
- Y/4" - Solid Yellow Line/Width
- BY/4" - Broken Yellow Line/Width
- DY/4" - Double Solid Yellow Line/Width

County: MONROE

Municipality: TOBYHANNA TOWNSHIP

Intersection: S.R. 940 & S.R. 380 (entrance and exit ramps)

Reviewed: *John E. [Signature]* 6/20/03  
Municipal Official Date

Reviewed: *[Signature]* 6/24/03  
District Traffic Signals Div. Date

Recommended: *[Signature]* 6/24/03  
District Traffic Engineer Date

Scale: 0 25 50 75

PHASING, TIMING, AND COLOR SEQUENCE CHART

	PHASE 2+5			PHASE 2+6			PHASE 3+7			PHASE 4+7			PHASE 3+8			PHASE 4+8			EMERGENCY FLASHING
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
SIGNALS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Y
1	Y	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
2,3	Y	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
4	Y	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
5,6	R	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
9	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
11,12	R	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
13,14	Y	R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
15,16	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
17,18	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	R	R	Y
FIXED	5	2		5	2		3	2		3	2		3	2		3	2		
MINIMUM	2			12			2			2			2			2			
ADDED INITIAL				4															
MAX INITIAL				20															
PASSAGE	2			6			2			2			2			2			
TO REDUCE				15															
BEFORE RED				20															
MIN. GAP				3															
MAXIMUM 1	10			24			11			11			11			16			
MAXIMUM 2	9			33			15			15			15			9			
PEDESTRIAN ①				22												24			
MEMORY	NL			mR			NL			NL			NL			NL			

PROGRAM CHART

EVENT	DAY	HOUR	MIN.	SEC.	PROGRAM	CYCLE	OFFSET	REMARKS
1	1-5	15	00	00	MAX 1	85	0	COORDINATION
2	1-5	22	00	00	MAX 2	90	-	VOLUME DENSITY
3	6,7	11	00	00	MAX 1	85	0	COORDINATION
4	6,7	15	00	00	MAX 2	90	-	VOLUME DENSITY

DAY 1 = MONDAY  
 OFFSETS ARE IN SECONDS  
 OFFSETS REFERENCED TO THE BEGINNING OF INTERVAL 5, PHASE 2+6

- OPERATIONAL NOTES
- ① UPON PEDESTRIAN ACTUATION ONLY
  - ② PHASE 2+5 MUST FOLLOW SIDE STREET PHASES ONLY
  - ③ IF FOLLOWED BY PHASE 3+8
  - ④ IF FOLLOWED BY PHASE 3+7 OR 3+8
  - ⑤ IF FOLLOWED BY PHASE 4+7
  - ⑥ IF FOLLOWED BY PHASE 3+8
  - ⑦ IF FOLLOWED BY PHASE 4+8
  - ⑧ IF FOLLOWED BY PHASE 4+8
  - ⑨ IF FOLLOWED BY PHASE 2+5
  - ⑩ VOLUME DENSITY FEATURES TO BEGIN TIMING UPON SIDE STREET ACTUATION
  - ⑪ IF FOLLOWED BY PHASE 3+7 OR 3+8
  - ⑫ IF FOLLOWED BY PHASE 2+6
  - ⑬ IF FOLLOWED BY PHASE 2+6
- DELAY TIME 3 SEC.

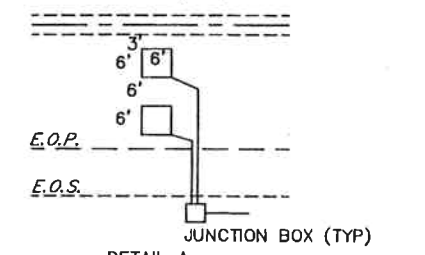
\* Condition Diagram Only

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE	SR 940		1 of 1
BOROUGH OF MOUNT POCONO				
PERMIT NO. 45-403-2			SHEET 2 OF 2	
DATE ISSUED 7-13-90			DATE REVISED 5-25-00*	

GENERAL NOTES

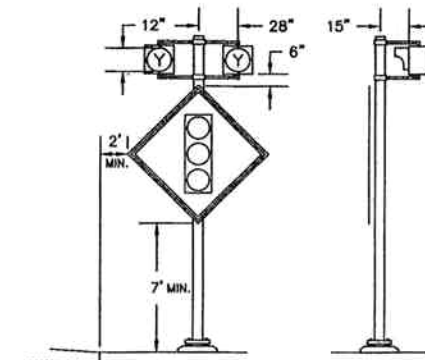
INSTALL, OPERATE, AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS ON OFFICIAL TRAFFIC CONTROL DEVICES.  
 NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.  
 ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.  
 THE PERMITTEE INSTALLS AND MAINTAINS ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING WHICH ARE CONSIDERED PART OF THE PERMIT, UNLESS OTHERWISE INDICATED. THE DEPARTMENT MAINTAINS THE LONGITUDINAL LINES ON STATE HIGHWAYS.  
 INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET BEHIND BARRIER CURB OR 10 FEET FROM THE EDGE OF PAVE OR 2 FEET FROM THE SHOULDER, WHICHEVER IS GREATER.  
 INSTALL SIGNAL HEADS AND SIGNS ERRECTED OVER THE ROADWAY WITH BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.  
 INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.  
 INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.  
 IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY, IF NECESSARY.  
 THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, CONSULT WITH UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.  
 MAINTENANCE AND PROTECTION OF TRAFFIC FOR THE INSTALLATION AND MAINTENANCE OF THIS TRAFFIC SIGNAL TO BE IN ACCORDANCE WITH PUBLICATION 203, WORK ZONE TRAFFIC CONTROL.

ADVANCE DETECTOR 350 FEET FROM STOPBAR (TYP)



DETAIL A 1"=20'

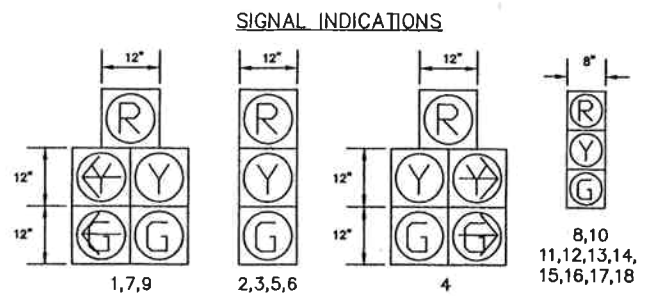
12" YELLOW LENSES FLASHING ALTERNATELY



SIGN M DETAIL N.T.S.

SIGN TABULATION

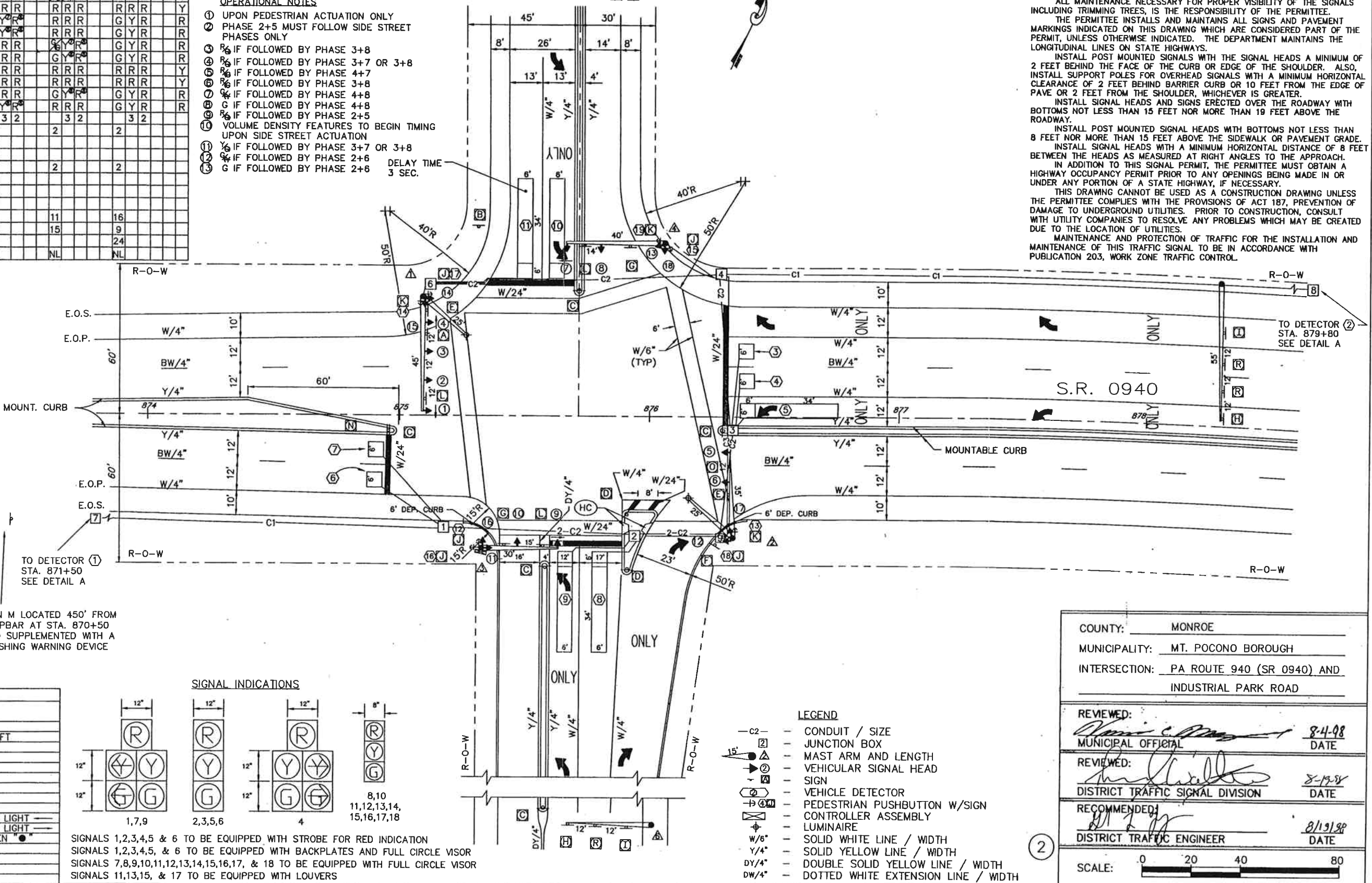
PLAN SYMBOL	SERIES	SIZE	QTY	MESSAGE
A	R10-10R	24x30	1	RIGHT TURN SIGNAL
B	R3-7L	30x30	1	LEFT LANE MUST TURN LEFT
C	R4-7	24x30	5	KEEP RIGHT
D	W16-1	18x18	2	HAZARD MARKER
E	D3-4	96x16	2	Industrial Park Rd
F	R1-2	36x36	1	YIELD
G	D3-4	81x16	2	Route 940
H	R3-5L	30x36	2	LEFT TURN
I	R3-5R	30x36	2	RIGHT TURN
J	R10-3	9x12	5	PUSH BUTTON FOR GREEN LIGHT
K	R10-3	9x12	3	PUSH BUTTON FOR GREEN LIGHT
L	R10-12	30x36	3	LEFT TURN YIELD ON GREEN
M	W3-3	48x48	1	SIGNAL AHEAD
N	R3-3	24x24	1	NO TURNS
O	R3-3	36x36	1	NO TURNS
R	R3-5S	30x36	3	STRAIGHT THROUGH



SIGNALS 1,2,3,4,5 & 6 TO BE EQUIPPED WITH STROBE FOR RED INDICATION  
 SIGNALS 1,2,3,4,5, & 6 TO BE EQUIPPED WITH BACKPLATES AND FULL CIRCLE VISOR  
 SIGNALS 7,8,9,10,11,12,13,14,15,16,17, & 18 TO BE EQUIPPED WITH FULL CIRCLE VISOR  
 SIGNALS 11,13,15, & 17 TO BE EQUIPPED WITH LOUVERS

180 FEET FROM STOP BAR

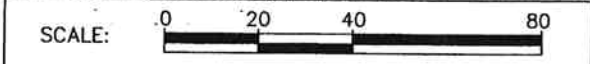
INDUSTRIAL PARK ROAD



- LEGEND
- C2- CONDUIT / SIZE
  - JUNCTION BOX
  - MAST ARM AND LENGTH
  - VEHICULAR SIGNAL HEAD
  - SIGN
  - VEHICLE DETECTOR
  - PEDESTRIAN PUSHBUTTON W/SIGN
  - CONTROLLER ASSEMBLY
  - LUMINAIRE
  - SOLID WHITE LINE / WIDTH
  - SOLID YELLOW LINE / WIDTH
  - DOUBLE SOLID YELLOW LINE / WIDTH
  - DOTTED WHITE EXTENSION LINE / WIDTH

COUNTY: MONROE  
 MUNICIPALITY: MT. POCONO BOROUGH  
 INTERSECTION: PA ROUTE 940 (SR 0940) AND INDUSTRIAL PARK ROAD

REVIEWED: *[Signature]* 8-4-98  
 MUNICIPAL OFFICIAL DATE  
 REVIEWED: *[Signature]* 8-12-98  
 DISTRICT TRAFFIC SIGNAL DIVISION DATE  
 RECOMMENDED: *[Signature]* 8/19/98  
 DISTRICT TRAFFIC ENGINEER DATE



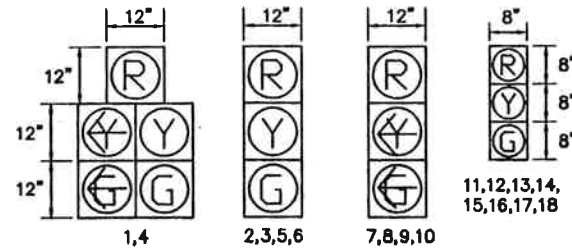
PHASING, TIMING, AND COLOR SEQUENCE CHART

SIGNALS	PHASE 1+5			PHASE 1+6			PHASE 2+5			PHASE 2+6			PHASE 4			PHASE 8			EMERGENCY FLASHING
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	R	R	R	R	R	R	Y	R	R	G	Y	R	G	Y	R	R	R	R	Y
2,3	R	R	R	R	R	R	G	Y	R	G	Y	R	R	R	R	R	R	R	Y
4	R	R	R	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	Y
5,6	R	R	R	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	Y
7,8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
9,10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y
11,12	R	R	R	R	R	R	G	Y	R	G	Y	R	R	R	R	R	R	R	Y
13,14	R	R	R	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	Y
15,16	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	Y
17,18	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	Y
FIXED	5.5	1.5		5.5	1.5		5.5	1.5		5.5	1.5		3	3		3	3		
MINIMUM	3			3			3			12			3			3			
ADDED INITIAL										4									
MAX INITIAL										20									
PASSAGE TO RED	3			3			3			6			3			3			
BEFORE RED										15									
MIN. GAP										3									
MAXIMUM 1	7			7			7			32			10			10			
MAXIMUM 2	7			7			7			43			7			7			
PEDESTRIAN										20			22			22			
MEMORY	NL			NL			NL			NR			L			L			

OPERATIONAL NOTES

- ① IF FOLLOWED BY 2+5
- ② IF FOLLOWED BY 1+6
- ③ IF FOLLOWED BY 2+6
- ④ G IF FOLLOWED BY 2+6
- ⑤ G IF FOLLOWED BY 2+5
- ⑥ G IF FOLLOWED BY 1+6
- ⑦ TIMING WILL BE AS SHOWN IN PHASE 2+6. INTERVALS 1 & 2 MAY BE COMPLETED IN THIS PHASE OR MAY TIME OUT IN PHASE 2+6.
- ⑧ VOLUME DENSITY TIMINGS TO BEGIN AFTER PHASE 4 OR PHASE 8 ACTUATION.
- ⑨ UPON PEDESTRIAN ACTUATION ONLY
- ⑩ PHASE 1+5, PHASE 1+6, OR PHASE 2+5 TO FOLLOW PHASE 4 OR PHASE 8.

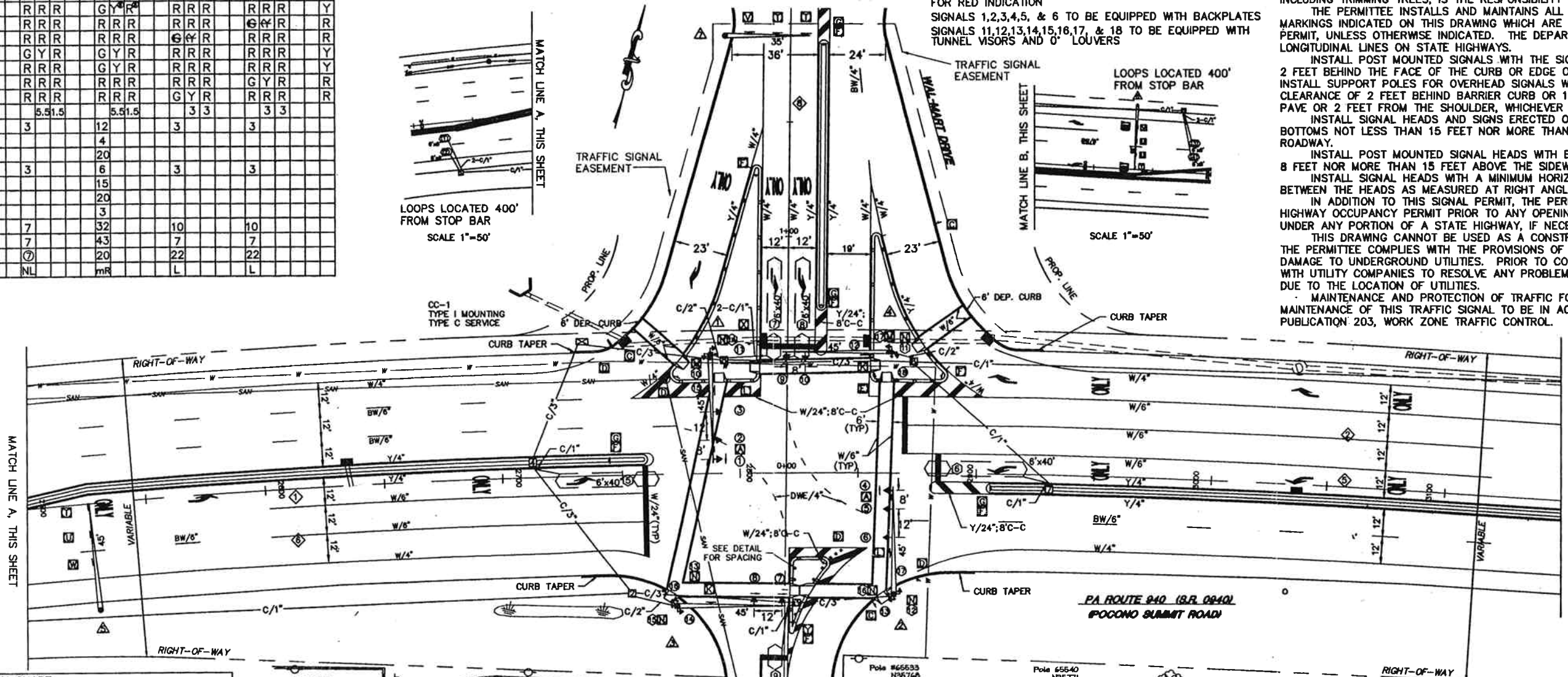
SIGNAL INDICATIONS



SIGNALS 1,2, & 3 TO BE EQUIPPED WITH STROBE FOR RED INDICATION  
 SIGNALS 1,2,3,4,5, & 6 TO BE EQUIPPED WITH BACKPLATES  
 SIGNALS 11,12,13,14,15,16,17, & 18 TO BE EQUIPPED WITH TUNNEL VISORS AND 0° LOUVERS

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE	SR 940		
BOROUGH OF MOUNT POCONO				
PERMIT NO. 45-403-3	SHEET 2 OF 2			
DATE ISSUED 8-25-98	DATE REVISED 11-8-00			
▲ CONDITION DIAGRAM ONLY				
GENERAL NOTES				

INSTALL, OPERATE, AND MAINTAIN THIS TRAFFIC SIGNAL IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS ON OFFICIAL TRAFFIC CONTROL DEVICES.  
 NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.  
 ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.  
 THE PERMITTEE INSTALLS AND MAINTAINS ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING WHICH ARE CONSIDERED PART OF THE PERMIT, UNLESS OTHERWISE INDICATED. THE DEPARTMENT MAINTAINS THE LONGITUDINAL LINES ON STATE HIGHWAYS.  
 INSTALL POST MOUNTED SIGNALS WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. ALSO, INSTALL SUPPORT POLES FOR OVERHEAD SIGNALS WITH A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET BEHIND BARRIER CURB OR 10 FEET FROM THE EDGE OF PAVE OR 2 FEET FROM THE SHOULDER, WHICHEVER IS GREATER.  
 INSTALL SIGNAL HEADS AND SIGNS ERRECTED OVER THE ROADWAY WITH BOTTOMS NOT LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY.  
 INSTALL POST MOUNTED SIGNAL HEADS WITH BOTTOMS NOT LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.  
 INSTALL SIGNAL HEADS WITH A MINIMUM HORIZONTAL DISTANCE OF 8 FEET BETWEEN THE HEADS AS MEASURED AT RIGHT ANGLES TO THE APPROACH.  
 IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE MUST OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY, IF NECESSARY.  
 THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, CONSULT WITH UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.  
 MAINTENANCE AND PROTECTION OF TRAFFIC FOR THE INSTALLATION AND MAINTENANCE OF THIS TRAFFIC SIGNAL TO BE IN ACCORDANCE WITH PUBLICATION 203, WORK ZONE TRAFFIC CONTROL.



NEAREST SIGNAL IS 690' AT INDUSTRIAL PARK ROAD  
 GRADE -0.40%  
 SPEED LIMIT 45 MPH

NEAREST SIGNAL IS 3375' AT RT. 611/RT. 196  
 GRADE +1.20%  
 SPEED LIMIT 45 MPH

PROGRAM CHART

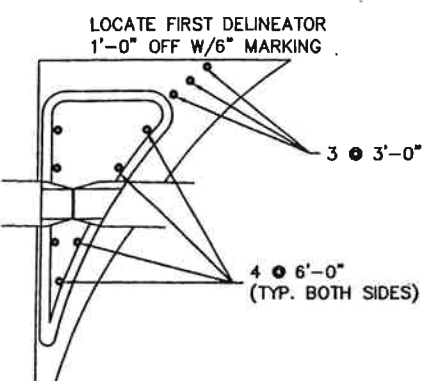
EVENT	DAY	HOUR	MIN.	SEC.	PROGRAM	CYCLE	OFFSET	REMARKS
1	1-5	15	00	00	MAX 1	85	2	COORDINATION
2	1-5	22	00	00	MAX 2	90	-	VOLUME DENSITY
3	6,7	11	00	00	MAX 1	85	2	COORDINATION
4	6,7	15	00	00	MAX 2	90	-	VOLUME DENSITY

DAY 1 = MONDAY OFFSETS ARE IN SECONDS  
 OFFSETS REFERENCED TO THE BEGINNING OF INTERVAL 11, PHASE 2+6

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	QTY	MESSAGE
A	R10-12	30x36	2	LEFT TURN YIELD ON GREEN
C	R1-2	36x36	3	YIELD
D	R5-1	30x30	4	DO NOT ENTER
E	R4-14	24x30	1	ENTER HERE
F	W16-1	18x18	7	HAZARD MARKER
G	R4-7	24x30	4	KEEP RIGHT
K	D3-4	81x16	2	Route 940
L	D3-4	54x16	2	Oak St
M	R10-3	9x12	2	PUSH BUTTON FOR GREEN LIGHT
N	R10-3	9x12	6	PUSH BUTTON FOR GREEN LIGHT
T	R3-5L	30x36	5	LEFT TURN
U	R3-5S	30x36	3	STRAIGHT THROUGH
V	R3-5R	30x36	3	RIGHT TURN
W	R3-5SR	30x36	1	OPTIONAL RIGHT TURN
X	R3-8LL	30x30	1	LANE USE CONTROL - DOUBLE LEFT TURN ONLY
Y	R3-8LR	30x30	2	LANE USE CONTROL - LEFT/RIGHT TURNS ONLY

DELINEATOR PLACEMENT DETAIL



NO SIGNAL WITHIN 1 MILE  
 GRADE +4.3%  
 SPEED LIMIT - 25 MPH

- LEGEND
- C/2" - CONDUIT / SIZE
  - - JUNCTION BOX
  - - MAST ARM AND LENGTH
  - - VEHICULAR SIGNAL HEAD
  - - PEDESTRIAN SIGNAL HEAD
  - - SIGN
  - - VEHICLE DETECTOR
  - - PEDESTRIAN PUSHBUTTON W/SIGN
  - - CONTROLLER ASSEMBLY
  - - RAISED PAVEMENT MARKER, WHITE
  - - RAISED PAVEMENT MARKER, YELLOW
  - W/6" - SOLID WHITE LINE / WIDTH
  - Y/4" - SOLID YELLOW LINE / WIDTH
  - DY/4" - DOUBLE SOLID YELLOW LINE / WIDTH
  - DW/4" - DOTTED WHITE EXTENSION LINE / WIDTH
  - - TYPE II FLEXIBLE DELINEATOR, WHITE



COUNTY: MONROE  
 MUNICIPALITY: MT. POCONO BOROUGH  
 INTERSECTION: PA ROUTE 940 (SR 0940) AND OAK STREET/WAL-MART DRIVEWAY

REVIEWED: *[Signature]* 10/19/00 DATE  
 MUNICIPAL OFFICIAL

REVIEWED: *[Signature]* 11/6/00 DATE  
 DISTRICT TRAFFIC SIGNAL DIVISION

RECOMMENDED: *[Signature]* 11/10/00 DATE  
 DISTRICT TRAFFIC ENGINEER

SCALE: 0 25 50 100

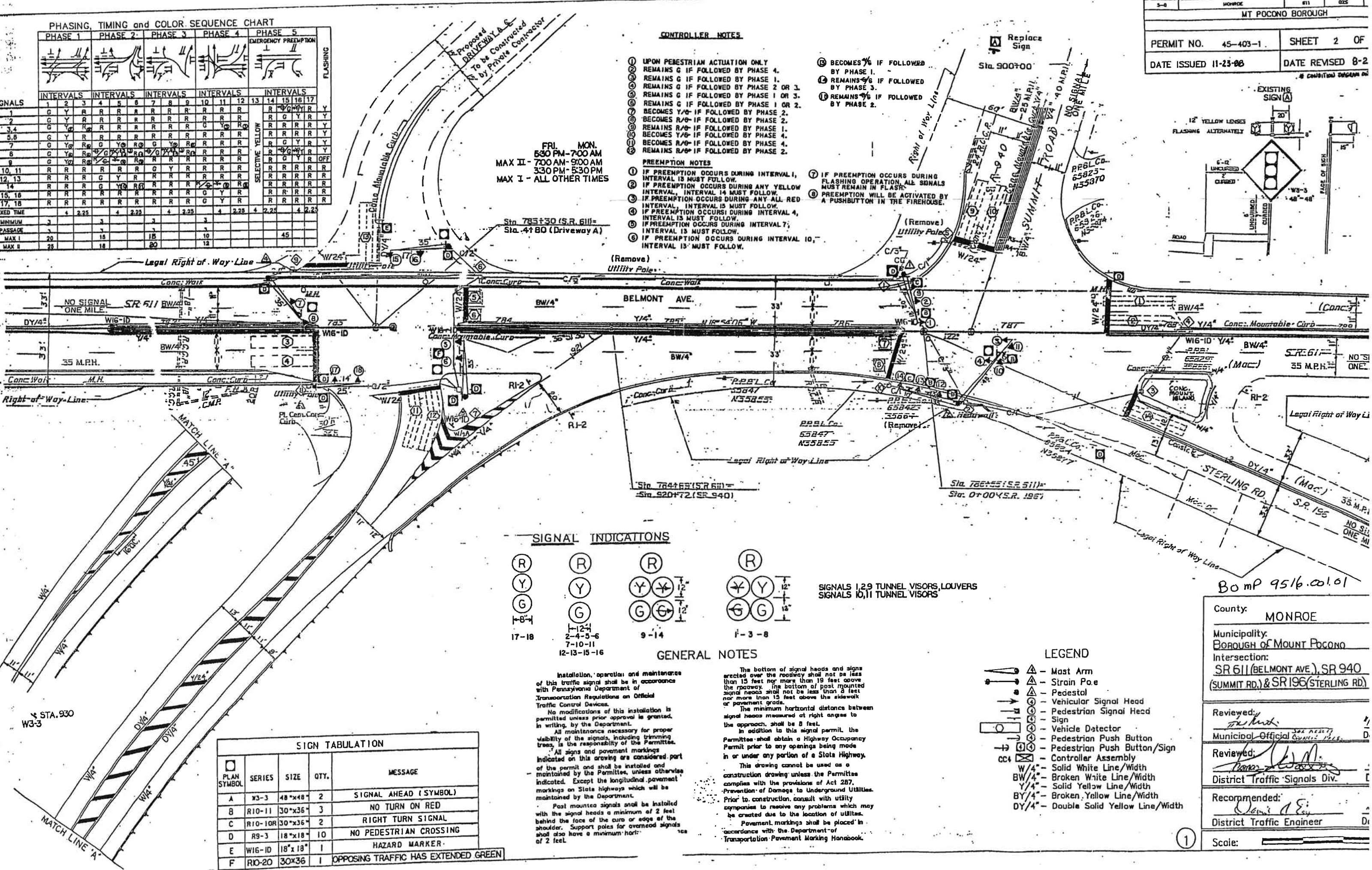
**PHASING, TIMING and COLOR SEQUENCE CHART**

SIGNALS	PHASE 1												PHASE 2												PHASE 3												PHASE 4												PHASE 5																												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12																	
1	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
2	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
3,4	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
5,6	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
7	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
8	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
9	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R																		
10, 11	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R																		
12, 13	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R																		
14	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R																		
15, 16	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R																		
17, 18	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R																		
FIXED TIME	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25	4	2.25	3	4	2.25	3	4	2.25	3	4	2.25
MINIMUM PASSAGE	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3																		
MAX I	20	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15																		
MAX II	25	18	18	20	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12																		

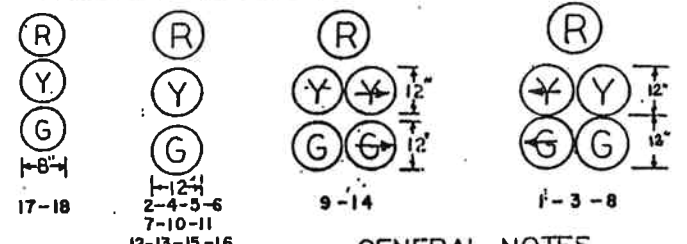
**CONTROLLER NOTES**

- UPON PEDESTRIAN ACTUATION ONLY
  - REMAINS G IF FOLLOWED BY PHASE 4.
  - REMAINS G IF FOLLOWED BY PHASE 1.
  - REMAINS G IF FOLLOWED BY PHASE 2 OR 3.
  - REMAINS G IF FOLLOWED BY PHASE 1 OR 3.
  - REMAINS G IF FOLLOWED BY PHASE 1 OR 2.
  - BECOMES Y/G IF FOLLOWED BY PHASE 2.
  - BECOMES R/G IF FOLLOWED BY PHASE 2.
  - REMAINS R/G IF FOLLOWED BY PHASE 1.
  - BECOMES Y/G IF FOLLOWED BY PHASE 4.
  - BECOMES R/G IF FOLLOWED BY PHASE 4.
  - REMAINS R/G IF FOLLOWED BY PHASE 2.
- PREEMPTION NOTES**
- IF PREEMPTION OCCURS DURING INTERVAL 1, INTERVAL 13 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING ANY YELLOW INTERVAL, INTERVAL 14 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING ANY ALL RED INTERVAL, INTERVAL 15 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING INTERVAL 4, INTERVAL 13 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING INTERVAL 7, INTERVAL 13 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING INTERVAL 10, INTERVAL 13 MUST FOLLOW.
  - IF PREEMPTION OCCURS DURING FLASHING OPERATION, ALL SIGNALS MUST REMAIN IN FLASH.
  - PREEMPTION WILL BE ACTIVATED BY A PUSHBUTTON IN THE FIREHOUSE.

FRI. MON.  
 5:30 PM - 7:00 AM  
 MAX II - 7:00 AM - 9:00 AM  
 3:30 PM - 5:30 PM  
 MAX I - ALL OTHER TIMES



**SIGNAL INDICATIONS**



SIGNALS 1,2,9 TUNNEL VISORS, LOUVERS  
 SIGNALS 10,11 TUNNEL VISORS

**GENERAL NOTES**

Installation, operation and maintenance of this traffic signal shall be in accordance with Pennsylvania Department of Transportation Regulations on Official Traffic Control Devices.  
 No modifications of this installation is permitted unless prior approval is granted, in writing, by the Department.  
 All maintenance necessary for proper visibility of the signals, including trimming trees, is the responsibility of the Permittee.  
 All signs and pavement markings indicated on this drawing are considered part of the permit and shall be installed and maintained by the Permittee, unless otherwise indicated. Except the longitudinal pavement markings on State highways which will be maintained by the Department.  
 Post mounted signals shall be installed with the signal heads a minimum of 2 feet behind the face of the curb or edge of the shoulder. Support poles for overhead signals shall also have a minimum height of 2 feet.

The bottom of signal heads and signs erected over the roadway shall not be less than 15 feet nor more than 19 feet above the roadway. The bottom of post mounted signal heads shall not be less than 8 feet nor more than 15 feet above the sidewalk or pavement grade.  
 The minimum horizontal distance between signal heads measured at right angles to the approach, shall be 8 feet.  
 In addition to this signal permit, the Permittee shall obtain a Highway Occupancy Permit prior to any openings being made in or under any portion of a State Highway.  
 This drawing cannot be used as a construction drawing unless the Permittee complies with the provisions of Act 287, Prevention of Damage to Underground Utilities. Prior to construction, consult with utility companies to resolve any problems which may be created due to the location of utilities.  
 Pavement markings shall be placed in accordance with the Department of Transportation Pavement Marking Handbook.

**LEGEND**

- Mast Arm
- Strain Po.e
- Pedestal
- Vehicular Signal Head
- Pedestrian Signal Head
- Sign
- Vehicle Detector
- Pedestrian Push Button
- Pedestrian Push Button/Sign
- Controller Assembly
- W/4" - Solid White Line/Width
- BW/4" - Broken White Line/Width
- Y/4" - Solid Yellow Line/Width
- BY/4" - Broken Yellow Line/Width
- DY/4" - Double Solid Yellow Line/Width

**SIGN TABULATION**

PLAN SYMBOL	SERIES	SIZE	QTY.	MESSAGE
A	W3-3	48"x48"	2	SIGNAL AHEAD (SYMBOL)
B	R10-11	30"x36"	3	NO TURN ON RED
C	R10-10R	30"x36"	2	RIGHT TURN SIGNAL
D	R9-3	18"x18"	10	NO PEDESTRIAN CROSSING
E	W16-10	18"x18"	1	HAZARD MARKER
F	R10-20	30"x36"	1	OPPOSING TRAFFIC HAS EXTENDED GREEN

County: MONROE  
 Municipality: BOROUGH OF MOUNT POCONO  
 Intersection: SR 611 (BELMONT AVE.), SR 940 (SUMMIT RD.) & SR 196 (STERLING RD.)

Reviewed: [Signature]  
 Municipal Official

Reviewed: [Signature]  
 District Traffic Signals Div.

Recommended: [Signature]  
 District Traffic Engineer

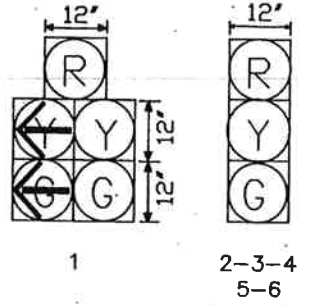
Scale: \_\_\_\_\_

PHASING, TIMING and COLOR SEQUENCE CHART

SIGNALS	PHASE 1		PHASE 2		PHASE 3		FLASHING OPERATION
	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	
1	G	Y	G	Y	R	R	Y
2	G	G	G	Y	R	R	Y
3,4	R	R	G	Y	R	R	Y
5,6	R	R	R	R	G	Y	R
FIXED		6	6	2	5	2	
MINIMUM	0		5		0		
SEC/ACT			2				
MAX INT. PASSAGE	2		6		2		
TO REDUCE BEFORE RED			10				
MIN. GAP			17				
MAXIMUM 1	7		22		15		
MAXIMUM 2	7		26		26		
MEMORY	NL		mR		NL		

① EMERGENCY FLASHING OPERATOIN

SIGNAL INDICATIONS



"POCONO TOWNSHIP"

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE	611	03S	1 OF 1
POCONO TOWNSHIP				
SR 611, AND SR 314 WESTBOUND				
PERMIT NO. 45-209-12			SHEET 2 OF 2	
DATE ISSUED 9-18-91			DATE REVISED 10-21-04	

▲ CONDITION DIAGRAM ONLY  
GENERAL NOTES

Installation, operation and maintenance of this traffic signal to be in accordance with Pennsylvania Department of Transportation Regulations on Official Traffic Control Devices.

No modifications of this installation are permitted unless prior approval is granted, in writing, by the Department.

All maintenance necessary for proper visibility of the signals, including trimming trees, is the responsibility of the Permittee.

All signs and pavement markings indicated on this drawing are considered part of the permit and are to be installed and maintained by the Permittee, unless otherwise indicated, except the longitudinal pavement markings on State highways which will be maintained by the Department.

Install post mounted signals with the signal heads a minimum of 2 feet behind the face of the curb or edge of the shoulder. Support poles for overhead signals will have a minimum horizontal clearance of 2 feet.

The bottom of signal heads and signs erected over the roadway are not to be less than 15 feet nor more than 19 feet above the roadway. The bottom of post mounted signal heads are to be not less than 8 feet nor more than 15 feet above the sidewalk or pavement grade.

The minimum horizontal distance between signal heads measured at right angles to the approach is to be 8 feet.

In addition to this signal permit, the Permittee will obtain a Highway Occupancy Permit prior to any openings being made in or under any portion of a State Highway.

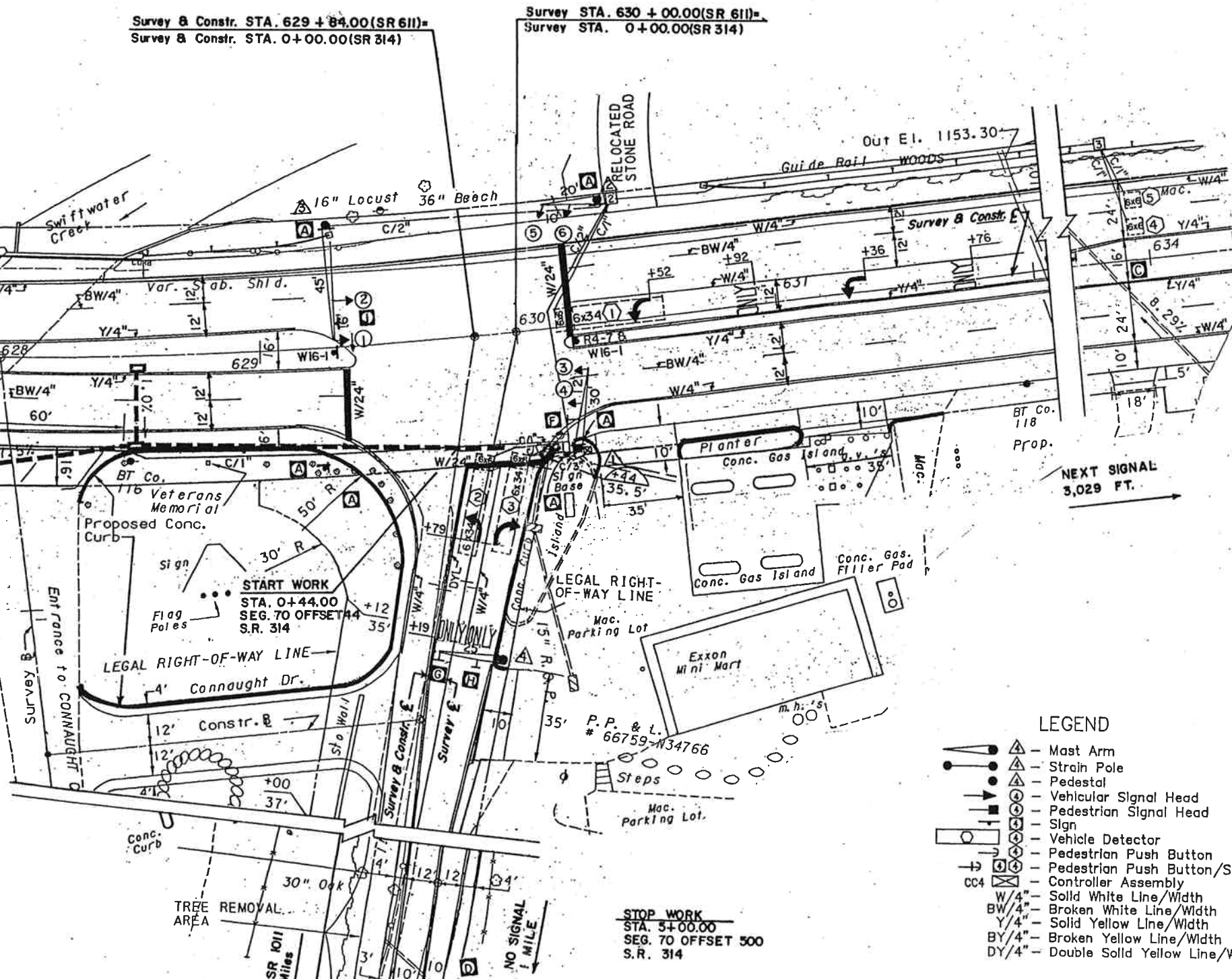
This drawing cannot be used as a construction drawing unless the Permittee complies with the provisions of Act 172, Prevention of Damage to Underground Utilities. Prior to construction consult with utility companies to resolve any problems which may be created due to the location of utilities.

Place pavement markings in accordance with the Department of Transportation Pavement Marking Handbook.

COORDINATION PROGRAM CHART

EVENT NO.	DAY OF WEEK	TIME			DIAL	CYCLE	OFFSET (SEC.)	REMARKS
		HOUR	MIN.	SEC.				
1	* * * * *	06	00	00	1	65		
2	* * * * *	07	15	00	2	80	AM PEAK	
3	* * * * *	08	15	00	1	65		
4	* * * * *	14	30	00	2	80	PM PEAK	
5	* * * * *	17	00	00	1	65		

PLAN SYMBOL	SERIES	SIZE	QTY.	MESSAGE
A	R9-3	18"x18"	6	NO PEDESTRIAN CROSSING
C	R3-7L	30"x30"	1	LEFT LANE MUST TURN LEFT
D	W3-3	36"x36"	1	SIGNAL AHEAD
F	R10-11	30"x36"	1	NO TURN ON RED 4:00 PM to 5:00 PM
G	R3-5L	30"x36"	1	LEFT TURN SYMBOL
H	R3-5R	30"x36"	1	RIGHT TURN SYMBOL
I	R10-12	30"x36"	1	LEFT TURN ON GREEN



LEGEND

- ▲ Mast Arm
- △ Strain Pole
- Pedestal
- Vehicular Signal Head
- Pedestrian Signal Head
- Sign
- Vehicle Detector
- Pedestrian Push Button
- Pedestrian Push Button/Sign
- Controller Assembly
- W/4" Solid White Line/Width
- BW/4" Broken White Line/Width
- Y/4" Solid Yellow Line/Width
- BY/4" Broken Yellow Line/Width
- DY/4" Double Solid Yellow Line/Width

County: MONROE

Municipality: POCONO TOWNSHIP

Intersection: SR 611 AND SR 314 WESTBOUND

Reviewed: *Patrick Ross* 4/2/91  
Municipal Official Date

Reviewed: *Roman Walker* 4/9/91  
District Traffic Signals Div. Date

Recommended: *David A. ...* 4/16/91  
District Traffic Engineer Date

*TRAFFIC IMPACT STUDY*

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**APPENDIX B**

**Traffic Counts**



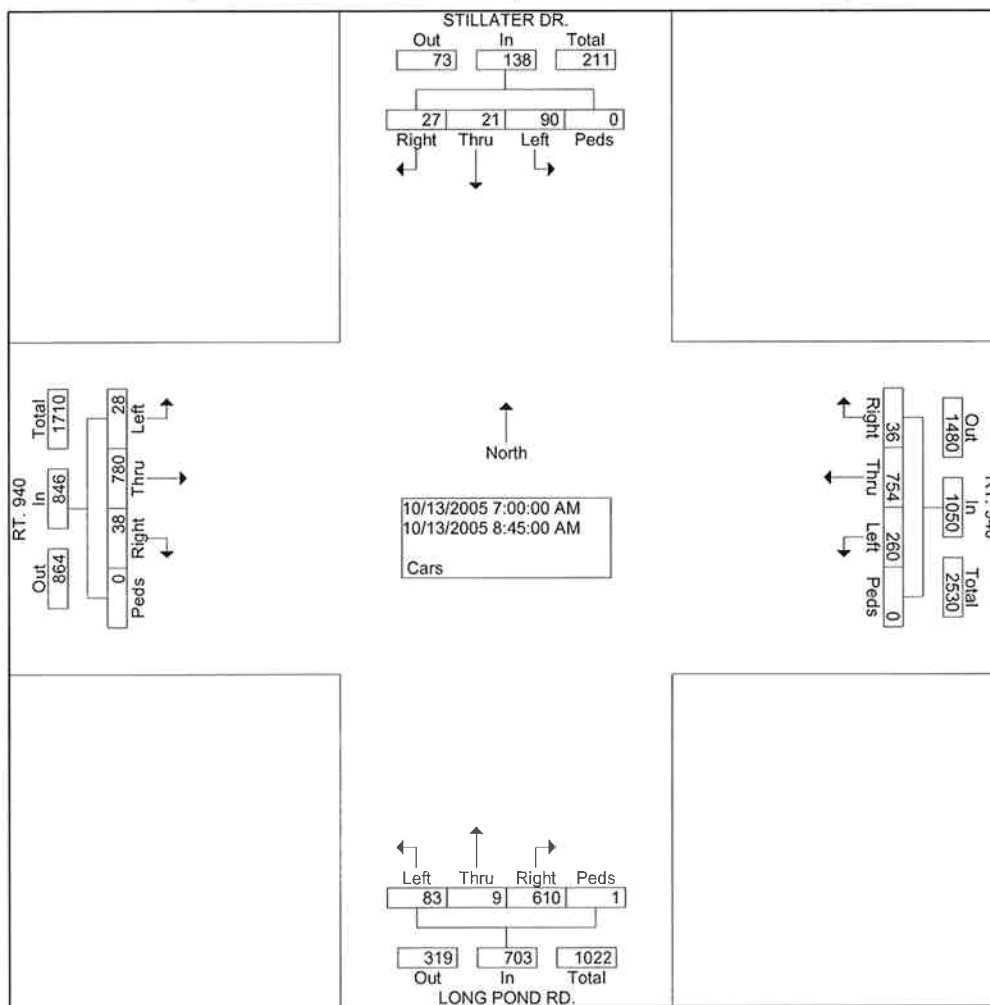
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Long Pond Rd./Rt. 940  
 Date: Thursday October 13, 2005  
 Counter: CMK

File Name : BG1013-1  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 1

Groups Printed- Cars

Start Time	STILLATER DR. From North					RT. 940 From East					LONG POND RD. From South					RT. 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	2	3	13	0	18	6	112	35	0	153	86	1	11	0	98	7	104	3	0	114	383
07:15 AM	7	4	5	0	16	5	132	39	0	176	98	2	15	0	115	6	111	9	0	126	433
07:30 AM	3	6	17	0	26	2	88	36	0	126	95	0	5	0	100	2	117	5	0	124	376
07:45 AM	2	1	11	0	14	3	87	31	0	121	80	0	8	0	88	5	99	3	0	107	330
Total	14	14	46	0	74	16	419	141	0	576	359	3	39	0	401	20	431	20	0	471	1522
08:00 AM	2	3	14	0	19	6	82	29	0	117	71	2	9	0	82	8	69	4	0	81	299
08:15 AM	5	2	17	0	24	3	85	26	0	114	75	1	15	1	92	3	94	1	0	98	328
08:30 AM	3	0	8	0	11	7	63	34	0	104	56	2	7	0	65	2	83	2	0	87	267
08:45 AM	3	2	5	0	10	4	105	30	0	139	49	1	13	0	63	5	103	1	0	109	321
Total	13	7	44	0	64	20	335	119	0	474	251	6	44	1	302	18	349	8	0	375	1215
Grand Total	27	21	90	0	138	36	754	260	0	1050	610	9	83	1	703	38	780	28	0	846	2737
Apprch %	19.6	15.2	65.2	0.0		3.4	71.8	24.8	0.0		86.8	1.3	11.8	0.1		4.5	92.2	3.3	0.0		
Total %	1.0	0.8	3.3	0.0	5.0	1.3	27.5	9.5	0.0	38.4	22.3	0.3	3.0	0.0	25.7	1.4	28.5	1.0	0.0	30.9	

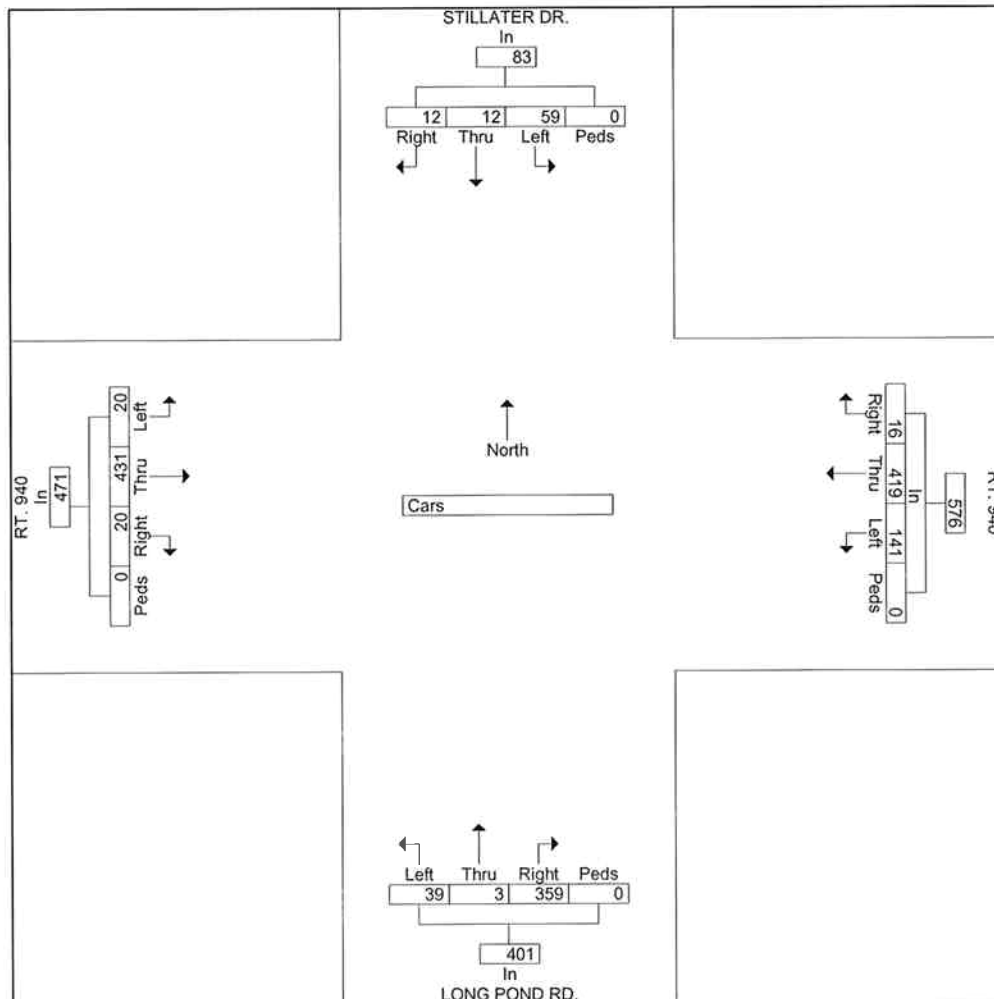


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Long Pond Rd./Rt. 940  
 Date: Thursday October 13, 2005  
 Counter: CMK

File Name : BG1013-1  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 2

Start Time	STILLATER DR. From North					RT. 940 From East					LONG POND RD. From South					RT. 940 From West					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:30 AM					07:00 AM					07:00 AM					07:00 AM					
Volume	12	12	59	0	83	16	419	141	0	576	359	3	39	0	401	20	431	20	0	471	
Percent	14.5	14.5	71.1	0.0		2.8	72.7	24.5	0.0		89.5	0.7	9.7	0.0		4.2	91.5	4.2	0.0		
High Int.	07:30 AM					07:15 AM					07:15 AM					07:15 AM					
Volume	3	6	17	0	26	5	132	39	0	176	98	2	15	0	115	6	111	9	0	126	
Peak Factor	0.798					0.818					0.872					0.935					



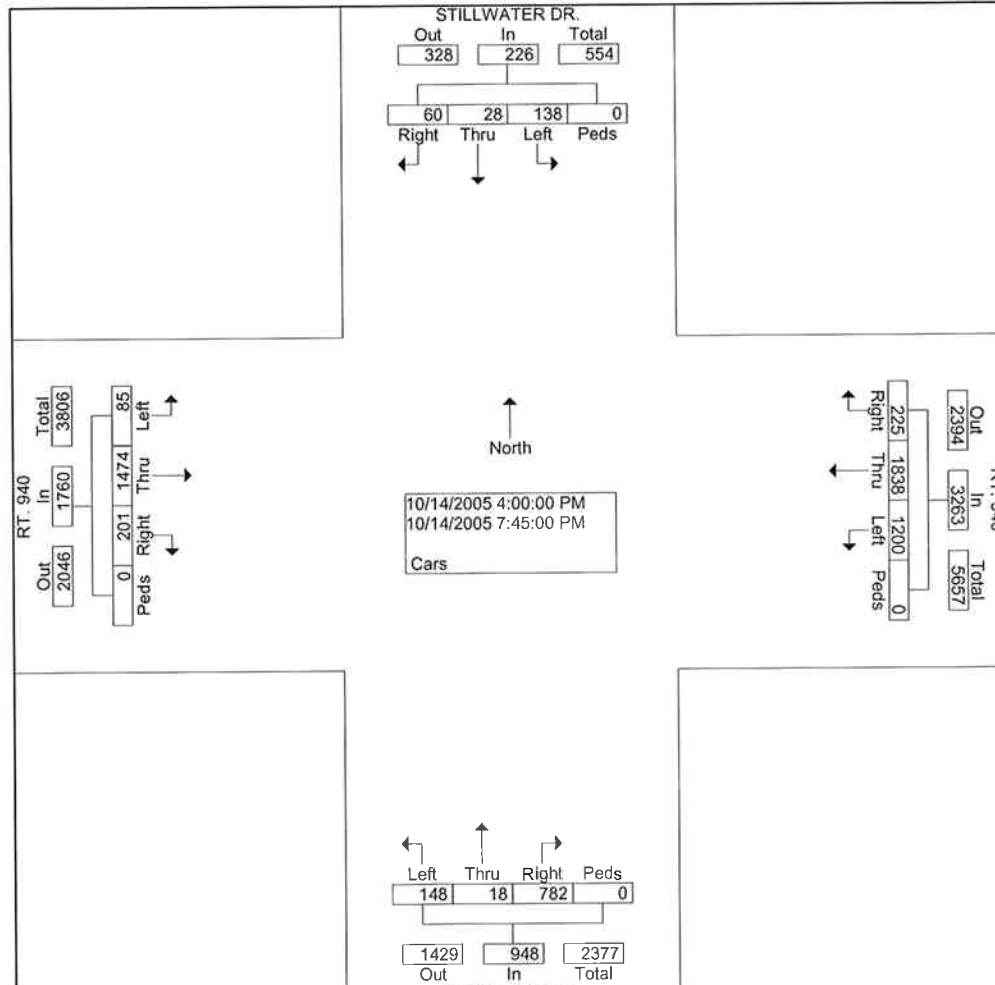
Location: Monroe County, PA  
 Intersection: Long Pond Rd /Rt. 940  
 Date: Friday October 14, 2005  
 Counter: CMK

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

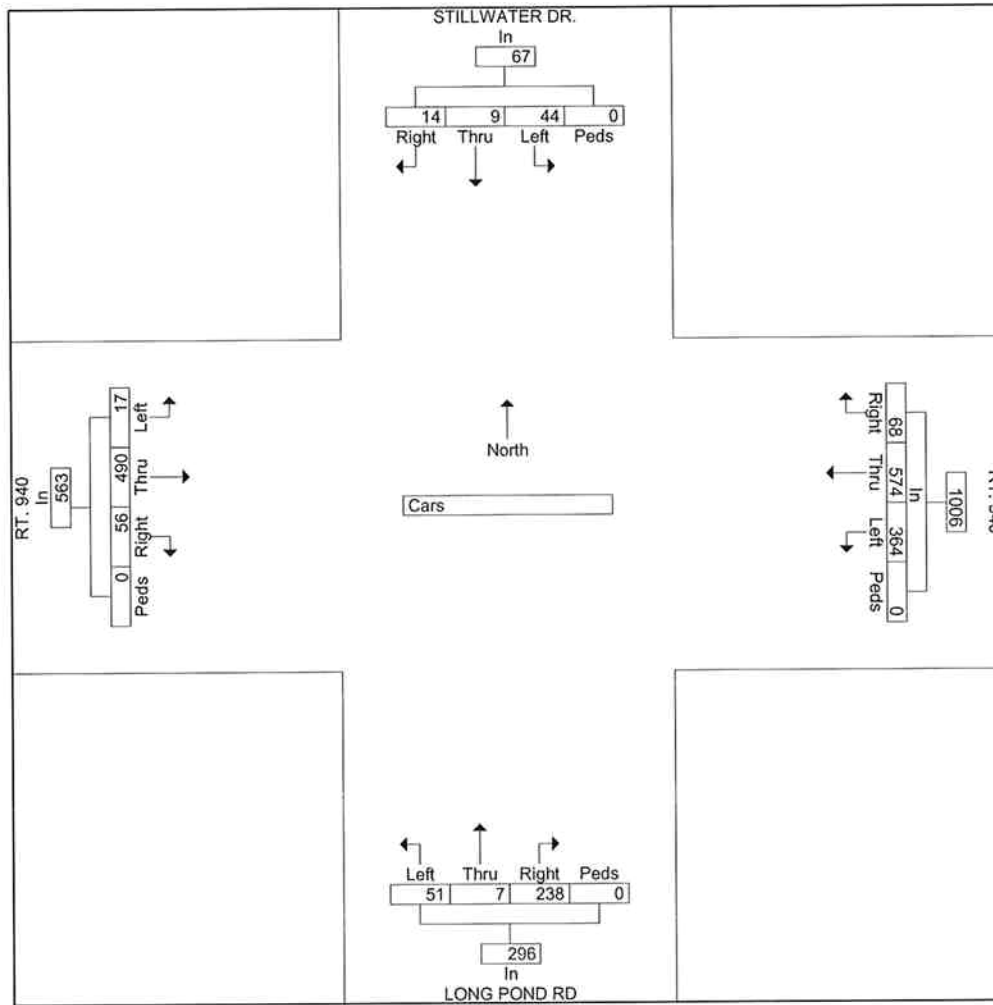
File Name : BG1014  
 Site Code : 000000  
 Start Date : 10/14/2005  
 Page No : 1

Groups Printed- Cars

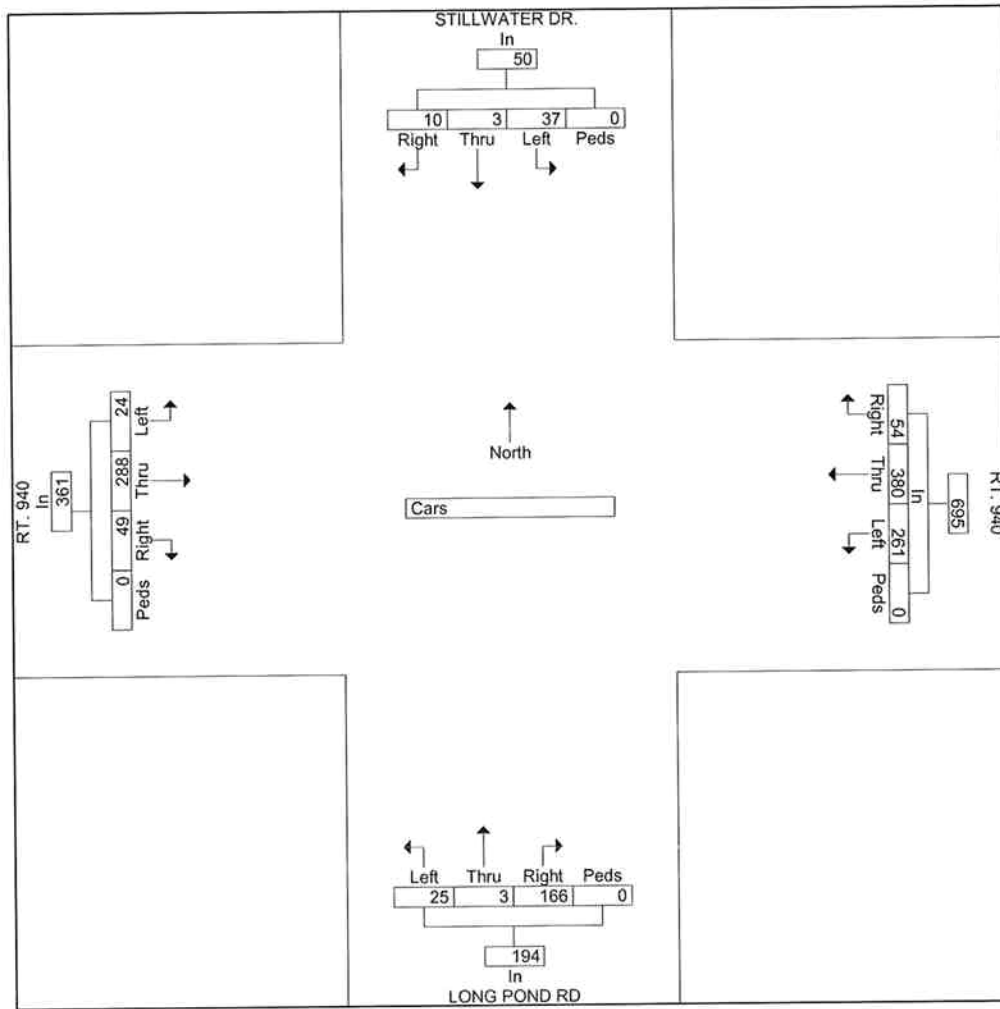
Start Time	STILLWATER DR. From North					RT. 940 From East					LONG POND RD From South					RT. 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
4:00 PM	4	7	9	0	20	15	149	77	0	241	42	2	13	0	57	7	147	2	0	156	4
4:15 PM	4	0	9	0	13	14	128	82	0	224	71	2	10	0	83	24	112	4	0	140	4
4:30 PM	6	3	8	0	17	13	143	96	0	252	64	2	8	0	74	11	104	4	0	119	4
4:45 PM	5	4	5	0	14	16	159	88	0	263	61	1	20	0	82	14	127	7	0	148	5
Total	19	14	31	0	64	58	579	343	0	980	238	7	51	0	296	56	490	17	0	563	19
5:00 PM	1	1	10	0	12	19	131	89	0	239	45	1	10	0	56	14	108	8	0	130	4
5:15 PM	1	2	15	0	18	20	141	91	0	252	60	1	13	0	74	9	118	2	0	129	4
5:30 PM	7	2	14	0	23	19	136	91	0	246	45	0	6	0	51	14	114	6	0	134	4
5:45 PM	9	1	4	0	14	10	123	76	0	209	47	3	10	0	60	16	93	7	0	116	3
Total	18	6	43	0	67	68	531	347	0	946	197	5	39	0	241	53	433	23	0	509	17
6:00 PM	3	2	6	0	11	18	123	86	0	227	65	2	10	0	77	16	92	6	0	114	4
6:15 PM	3	1	13	0	17	10	96	77	0	183	55	3	9	0	67	10	93	2	0	105	3
6:30 PM	1	0	9	0	10	19	101	69	0	189	40	0	7	0	47	22	58	7	0	87	3
6:45 PM	4	2	8	0	14	12	89	67	0	168	35	0	3	0	38	10	71	9	0	90	3
Total	11	5	36	0	52	59	409	299	0	767	195	5	29	0	229	58	314	24	0	396	14
7:00 PM	2	0	7	0	9	13	94	48	0	155	36	0	6	0	42	7	66	6	0	79	2
7:15 PM	4	1	6	0	11	9	88	66	0	163	41	1	8	0	50	11	79	3	0	93	3
7:30 PM	5	1	8	0	14	6	76	52	0	134	51	0	10	0	61	10	49	3	0	62	2
7:45 PM	1	1	7	0	9	12	61	45	0	118	24	0	5	0	29	6	43	9	0	58	2
Total	12	3	28	0	43	40	319	211	0	570	152	1	29	0	182	34	237	21	0	292	10
Grand Total	60	28	138	0	226	225	1838	1200	0	3263	782	18	148	0	948	201	1474	85	0	1760	61
pprch %	26.5	12.4	61.1	0.0		6.9	56.3	36.8	0.0		82.5	1.9	15.6	0.0		11.4	83.8	4.8	0.0		
Total %	1.0	0.5	2.2	0.0	3.6	3.6	29.7	19.4	0.0	52.7	12.6	0.3	2.4	0.0	15.3	3.2	23.8	1.4	0.0	28.4	



Start Time	STILLWATER DR. From North					RT. 940 From East					LONG POND RD From South					RT. 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:45 PM					04:30 PM					04:00 PM					04:00 PM					
Volume	14	9	44	0	67	68	574	364	0	1006	238	7	51	0	296	56	490	17	0	563	
Percent	20.9	13.4	65.7	0.0		6.8	57.1	36.2	0.0		80.4	2.4	17.2	0.0		9.9	87.0	3.0	0.0		
High Int. Volume	05:30 PM					04:45 PM					04:15 PM					04:00 PM					
Peak Factor	7	2	14	0	23	16	159	88	0	263	71	2	10	0	83	7	147	2	0	156	
	0.728					0.956					0.892					0.902					



Start Time	STILLWATER DR. From North					RT. 940 From East					LONG POND RD From South					RT. 940 From West					Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	10	3	37	0	50	54	380	261	0	695	166	3	25	0	194	49	288	24	0	361	
Percent	20.0	6.0	74.0	0.0		7.8	54.7	37.6	0.0		85.6	1.5	12.9	0.0		13.6	79.8	6.6	0.0		
High Int.	06:15 PM					06:30 PM					06:15 PM					06:15 PM					
Volume	3	1	13	0	17	19	101	69	0	189	55	3	9	0	67	10	93	2	0	105	
Peak Factor	0.735					0.919					0.724					0.860					



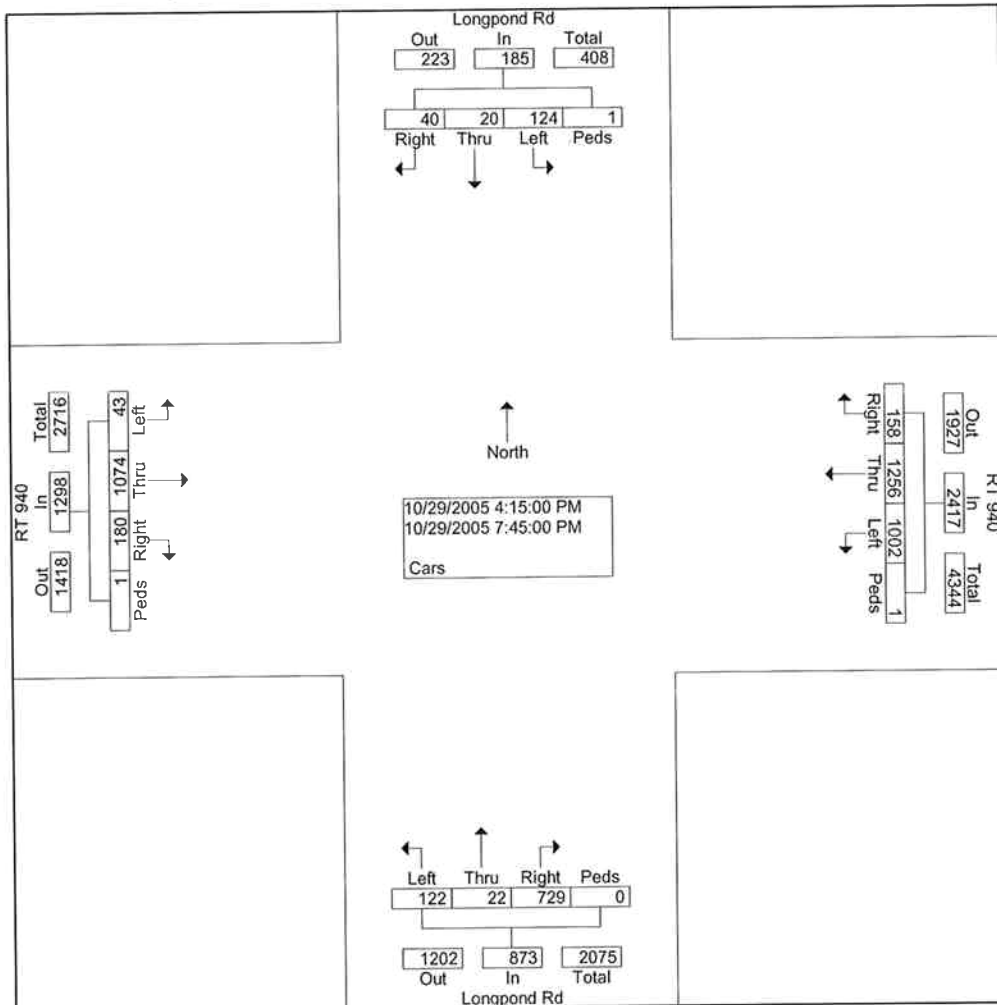
Location: Monroe County, PA  
 Intersection: Rt 940 / Longpond Rd  
 Date: Saturday, October 29, 2005  
 Counter: RZ

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

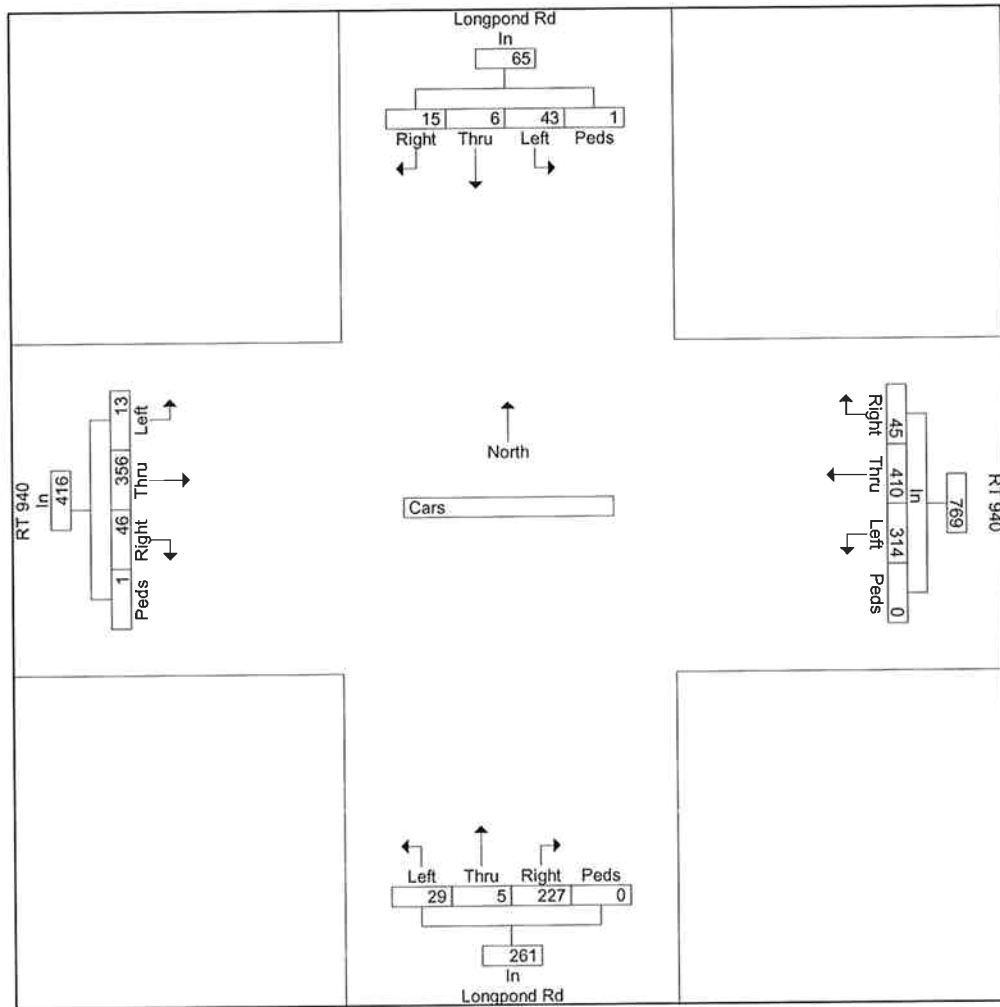
File Name : BG1029  
 Site Code : 000000  
 Start Date : 10/29/2  
 Page No : 1

Groups Printed- Cars

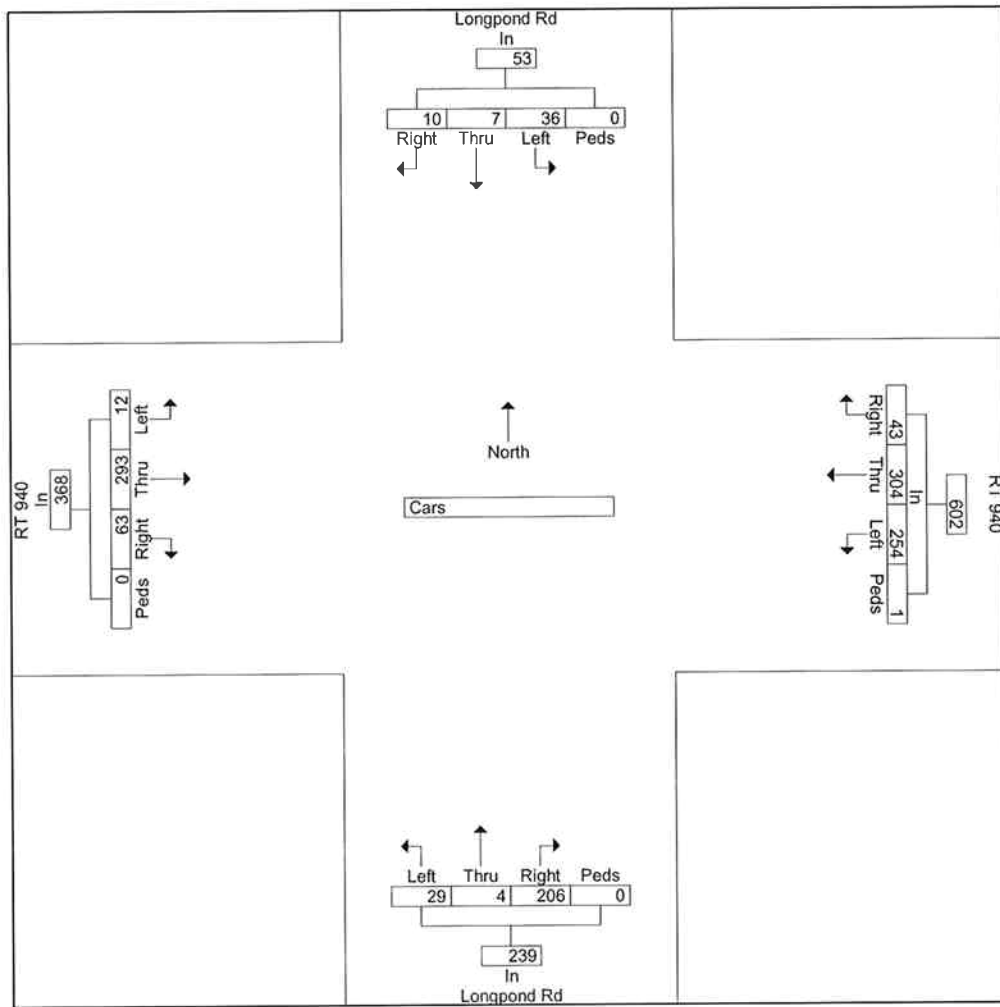
Start Time	Longpond Rd From North					RT 940 From East					Longpond Rd From South					RT 940 From West					Total				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total					
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
4:15 PM	6	3	14	0	23	11	111	88	0	210	64	1	12	0	77	11	94	2	0	107					
4:30 PM	1	0	11	1	13	8	96	76	0	180	48	2	7	0	57	16	81	2	1	100					
4:45 PM	5	2	7	0	14	11	109	83	0	203	61	0	3	0	64	10	100	5	0	115					
Total	12	5	32	1	50	30	316	247	0	593	173	3	22	0	198	37	275	9	1	322					
5:00 PM	3	1	11	0	15	15	94	67	0	176	49	1	8	0	58	9	81	4	0	94					
5:15 PM	2	0	5	0	7	18	80	78	0	176	41	2	11	0	54	11	63	1	0	75					
5:30 PM	1	1	12	0	14	13	105	77	0	195	76	2	7	0	85	7	82	2	0	91					
5:45 PM	1	3	5	0	9	10	99	70	0	179	47	2	7	0	56	10	70	4	0	84					
Total	7	5	33	0	45	56	378	292	0	726	213	7	33	0	253	37	296	11	0	344					
6:00 PM	2	5	11	0	18	12	93	69	0	174	52	1	11	0	64	20	81	5	0	106					
6:15 PM	5	0	12	0	17	11	65	71	0	147	59	1	5	0	65	20	66	1	0	87					
6:30 PM	1	0	6	0	7	12	61	60	1	134	48	1	8	0	57	7	82	4	0	93					
6:45 PM	2	2	7	0	11	8	85	54	0	147	47	1	5	0	53	16	64	2	0	82					
Total	10	7	36	0	53	43	304	254	1	602	206	4	29	0	239	63	293	12	0	368					
7:00 PM	5	1	4	0	10	6	70	61	0	137	42	3	14	0	59	18	55	5	0	78					
7:15 PM	2	1	7	0	10	5	71	55	0	131	38	1	11	0	50	13	61	4	0	78					
7:30 PM	3	1	4	0	8	11	56	58	0	125	27	1	8	0	36	9	39	0	0	48					
7:45 PM	1	0	8	0	9	7	61	35	0	103	30	3	5	0	38	3	55	2	0	60					
Total	11	3	23	0	37	29	258	209	0	496	137	8	38	0	183	43	210	11	0	264					
Grand Total	40	20	124	1	185	158	1256	1002	1	2417	729	22	122	0	873	180	1074	43	1	1298					
prch %	21.6	10.8	67.0	0.5		6.5	52.0	41.5	0.0		83.5	2.5	14.0	0.0		13.9	82.7	3.3	0.1						
Total %	0.8	0.4	2.6	0.0	3.9	3.3	26.3	21.0	0.0	50.6	15.3	0.5	2.6	0.0	18.3	3.8	22.5	0.9	0.0	27.2					



Start Time	Longpond Rd From North					RT 940 From East					Longpond Rd From South					RT 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:15 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:15 PM					04:15 PM					04:45 PM					04:15 PM					
Volume	15	6	43	1	65	45	410	314	0	769	227	5	29	0	261	46	356	13	1	416	
Percent	23.1	9.2	66.2	1.5		5.9	53.3	40.8	0.0		87.0	1.9	11.1	0.0		11.1	85.6	3.1	0.2		
High Int.	04:15 PM					04:15 PM					05:30 PM					04:45 PM					
Volume	6	3	14	0	23	11	111	88	0	210	76	2	7	0	85	10	100	5	0	115	
Peak Factor	0.707					0.915					0.768					0.904					



Start Time	Longpond Rd From North					RT 940 From East					Longpond Rd From South					RT 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 06:00 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:00 PM					06:00 PM					06:00 PM					06:00 PM					
Volume	10	7	36	0	53	43	304	254	1	602	206	4	29	0	239	63	293	12	0	368	
Percent	18.9	13.2	67.9	0.0		7.1	50.5	42.2	0.2		86.2	1.7	12.1	0.0		17.1	79.6	3.3	0.0		
High Int.	06:00 PM					06:00 PM					06:15 PM					06:00 PM					
Volume	2	5	11	0	18	12	93	69	0	174	59	1	5	0	65	20	81	5	0	106	
Peak Factor	0.736					0.865					0.919					0.868					





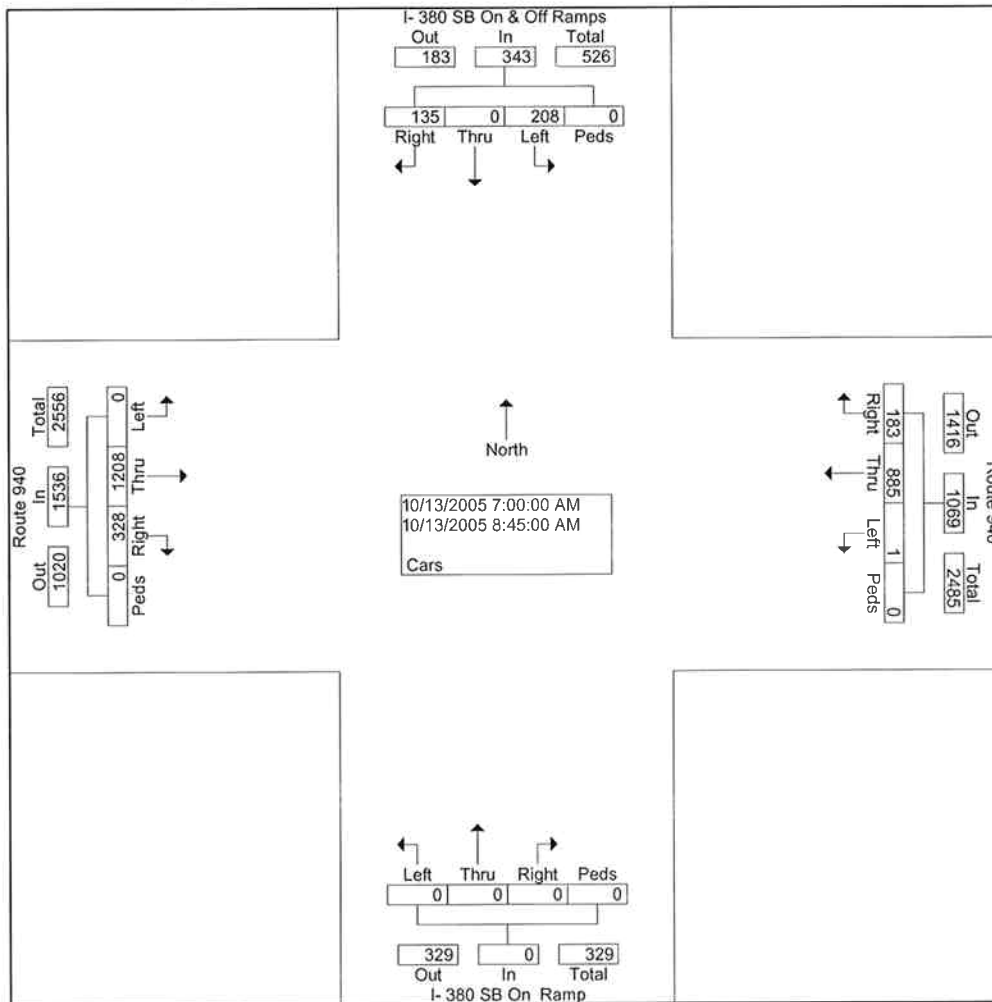
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Thursday, October 13, 2005  
 Counter: JT

File Name : BG1013-4  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 1

Groups Printed- Cars

Start Time	I- 380 SB On & Off Ramps From North					Route 940 From East					I- 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	23	0	30	0	53	17	126	0	0	143	0	0	0	0	0	39	197	0	0	236	432
07:15 AM	31	0	42	0	73	24	149	0	0	173	0	0	0	0	0	46	172	0	0	218	464
07:30 AM	14	0	40	0	54	30	105	0	0	135	0	0	0	0	0	53	184	0	0	237	426
07:45 AM	18	0	42	0	60	14	98	1	0	113	0	0	0	0	0	34	157	0	0	191	364
Total	86	0	154	0	240	85	478	1	0	564	0	0	0	0	0	172	710	0	0	882	1686
08:00 AM	15	0	20	0	35	26	99	0	0	125	0	0	0	0	0	43	123	0	0	166	326
08:15 AM	17	0	17	0	34	26	96	0	0	122	0	0	0	0	0	48	137	0	0	185	341
08:30 AM	11	0	9	0	20	25	94	0	0	119	0	0	0	0	0	30	121	0	0	151	290
08:45 AM	6	0	8	0	14	21	118	0	0	139	0	0	0	0	0	35	117	0	0	152	305
Total	49	0	54	0	103	98	407	0	0	505	0	0	0	0	0	156	498	0	0	654	1262
Grand Total	135	0	208	0	343	183	885	1	0	1069	0	0	0	0	0	328	1208	0	0	1536	2948
Apprch %	39.4	0.0	60.6	0.0		17.1	82.8	0.1	0.0		0.0	0.0	0.0	0.0		21.4	78.6	0.0	0.0		
Total %	4.6	0.0	7.1	0.0	11.6	6.2	30.0	0.0	0.0	36.3	0.0	0.0	0.0	0.0	0.0	11.1	41.0	0.0	0.0	52.1	

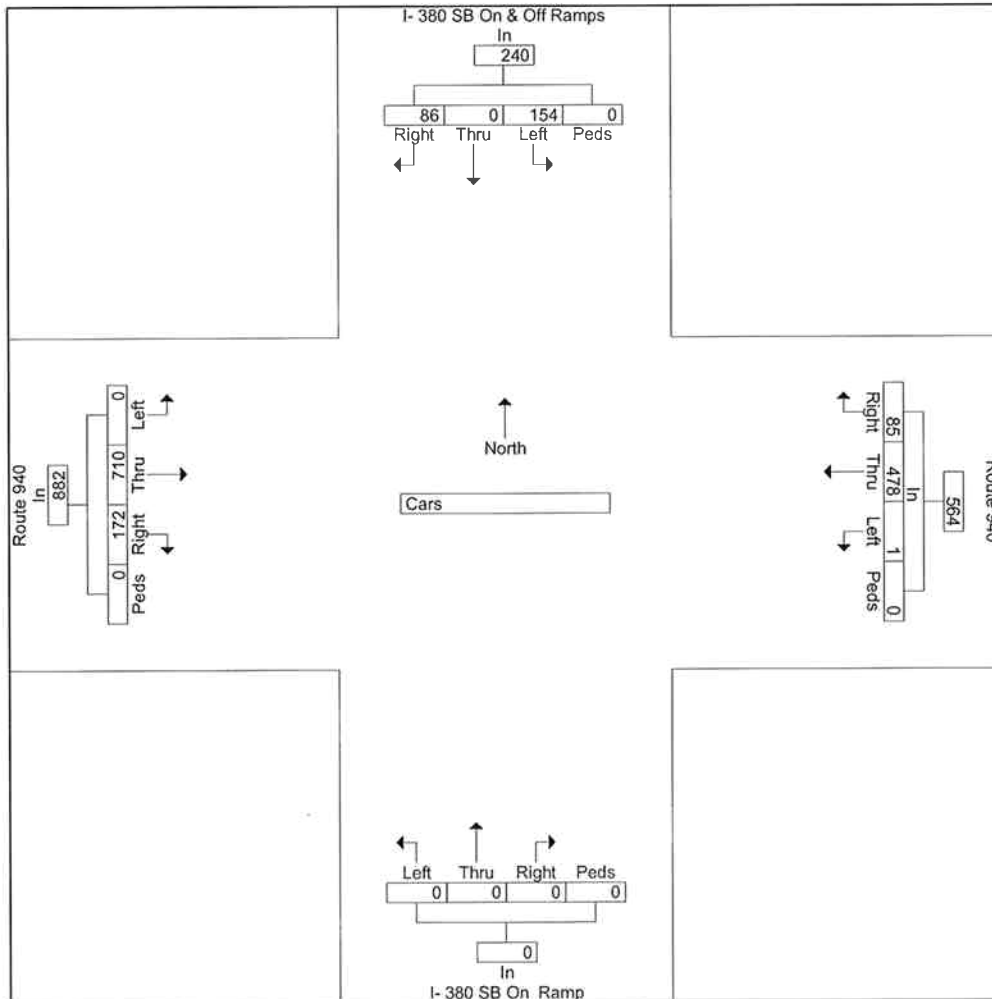


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Thursday, October 13, 2005  
 Counter: JT

File Name : BG1013-4  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 2

Start Time	I- 380 SB On & Off Ramps From North					Route 940 From East					I- 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:00 AM					07:00 AM					07:00 AM					07:00 AM					
Volume	86	0	154	0	240	85	478	1	0	564	0	0	0	0	0	172	710	0	0	882	
Percent	35.8	0.0	64.2	0.0		15.1	84.8	0.2	0.0		-	-	-	-	-	19.5	80.5	0.0	0.0		
High Int.	07:15 AM					07:15 AM					07:15 AM					07:30 AM					
Volume	31	0	42	0	73	24	149	0	0	173	-	-	-	-	-	53	184	0	0	237	
Peak Factor	0.822					0.815					-					0.930					



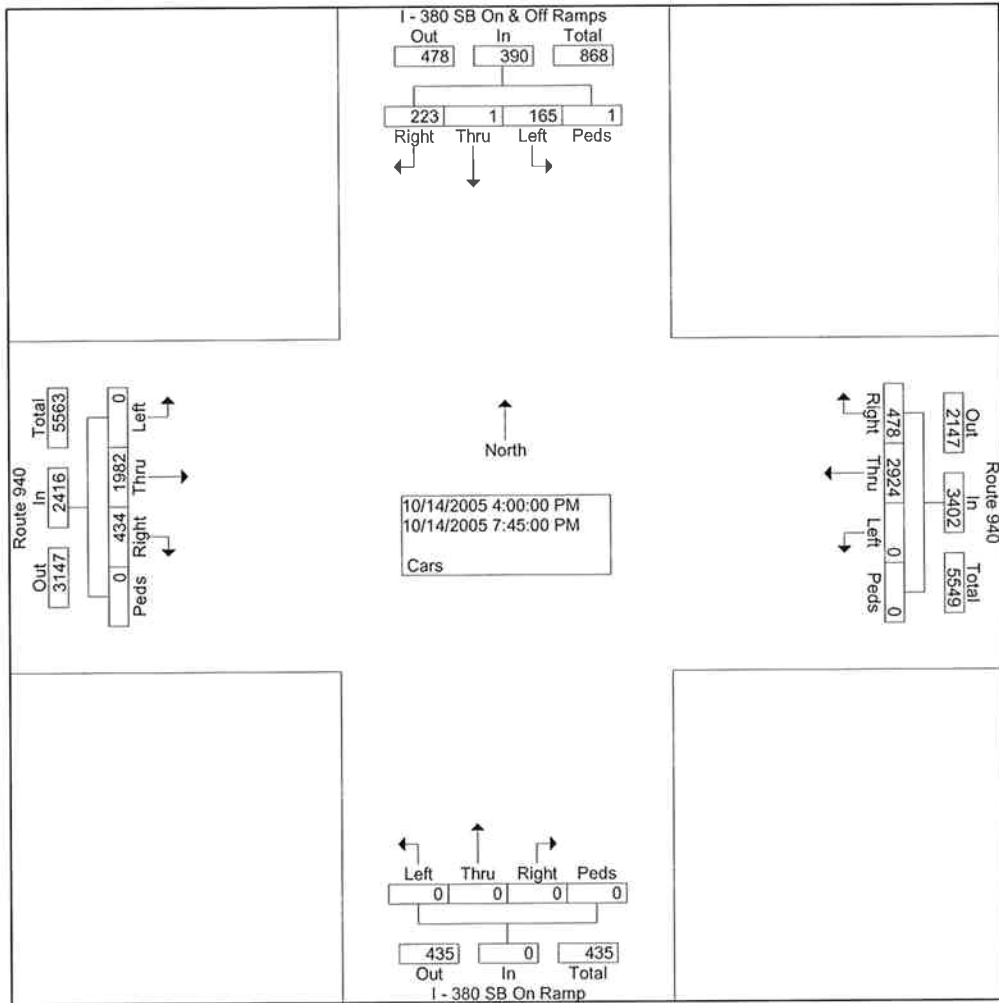
Tri-State Traffic Data, Inc.  
184 Baker Road

Location: Monroe Co., PA  
Intersection: Rt. 940 / I380 SB Ramps  
Date: Friday, October 14, 2005  
Counter: JT

File Name : I380SB~1  
Site Code : 00000000  
Start Date : 10/14/2005  
Page No : 1

Groups Printed- Cars

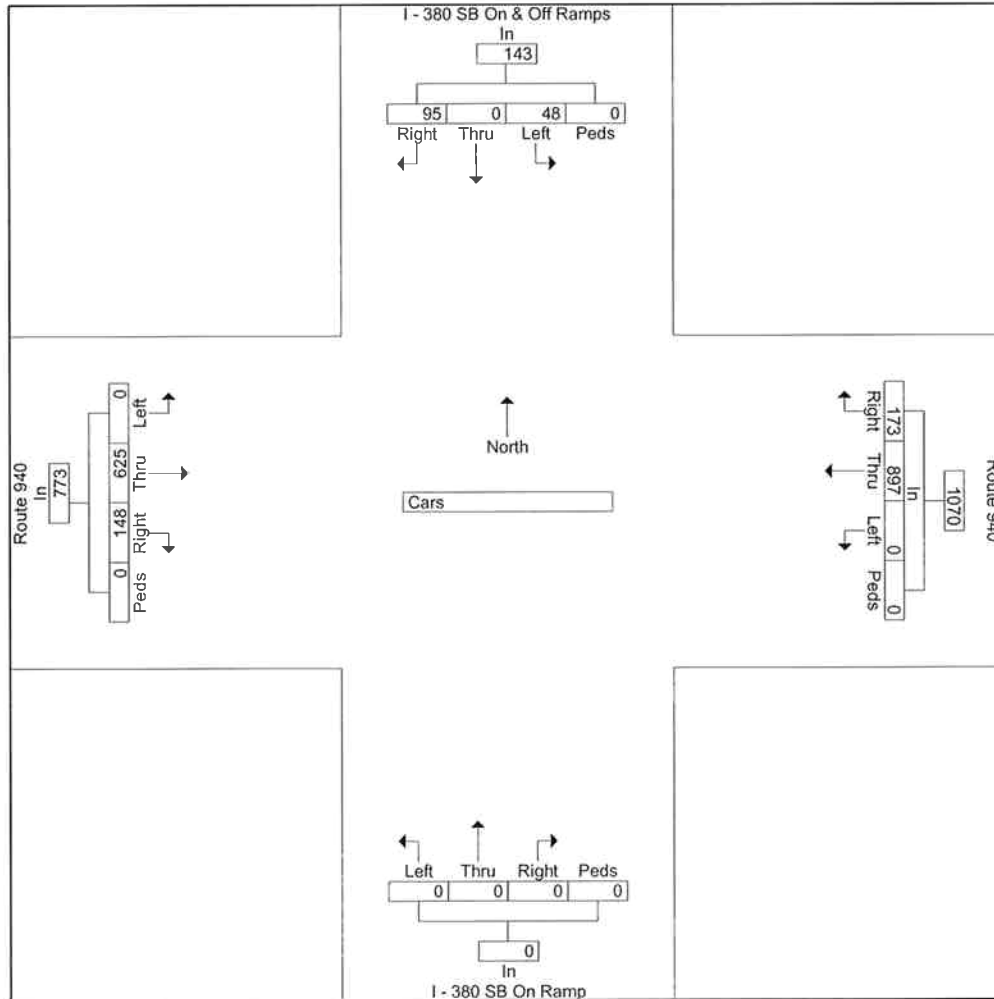
Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	14	0	22	0	36	39	214	0	0	253	0	0	0	0	0	38	146	0	0	184	473
04:15 PM	39	0	17	0	56	31	183	0	0	214	0	0	0	0	0	36	169	0	0	205	475
04:30 PM	18	0	4	0	22	42	222	0	0	264	0	0	0	0	0	38	151	0	0	189	475
04:45 PM	24	0	5	0	29	33	226	0	0	259	0	0	0	0	0	36	159	0	0	195	483
Total	95	0	48	0	143	145	845	0	0	990	0	0	0	0	0	148	625	0	0	773	1906
05:00 PM	10	0	9	0	19	63	218	0	0	281	0	0	0	0	0	23	147	0	0	170	470
05:15 PM	8	0	13	0	21	35	231	0	0	266	0	0	0	0	0	36	150	0	0	186	473
05:30 PM	17	0	14	0	31	27	223	0	0	250	0	0	0	0	0	32	135	0	0	167	448
05:45 PM	11	0	9	0	20	37	192	0	0	229	0	0	0	0	0	24	123	0	0	147	396
Total	46	0	45	0	91	162	864	0	0	1026	0	0	0	0	0	115	555	0	0	670	1787
06:00 PM	21	0	15	0	36	25	204	0	0	229	0	0	0	0	0	36	132	0	0	168	433
06:15 PM	15	0	12	0	27	15	169	0	0	184	0	0	0	0	0	21	124	0	0	145	356
06:30 PM	10	1	20	0	31	30	157	0	0	187	0	0	0	0	0	17	108	0	0	125	343
06:45 PM	7	0	9	0	16	27	155	0	0	182	0	0	0	0	0	32	81	0	0	113	311
Total	53	1	56	0	110	97	685	0	0	782	0	0	0	0	0	106	445	0	0	551	1443
07:00 PM	10	0	1	1	12	22	147	0	0	169	0	0	0	0	0	23	94	0	0	117	298
07:15 PM	8	0	9	0	17	15	154	0	0	169	0	0	0	0	0	16	104	0	0	120	306
07:30 PM	5	0	6	0	11	23	130	0	0	153	0	0	0	0	0	13	97	0	0	110	274
07:45 PM	6	0	0	0	6	14	99	0	0	113	0	0	0	0	0	13	62	0	0	75	194
Total	29	0	16	1	46	74	530	0	0	604	0	0	0	0	0	65	357	0	0	422	1072
Grand Total	223	1	165	1	390	478	2924	0	0	3402	0	0	0	0	0	434	1982	0	0	2416	6208
Apprch %	57.2	0.3	42.3	0.3		14.1	85.9	0.0	0.0		0.0	0.0	0.0	0.0		18.0	82.0	0.0	0.0		
Total %	3.6	0.0	2.7	0.0	6.3	7.7	47.1	0.0	0.0	54.8	0.0	0.0	0.0	0.0	0.0	7.0	31.9	0.0	0.0	38.9	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : I380SB~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 3

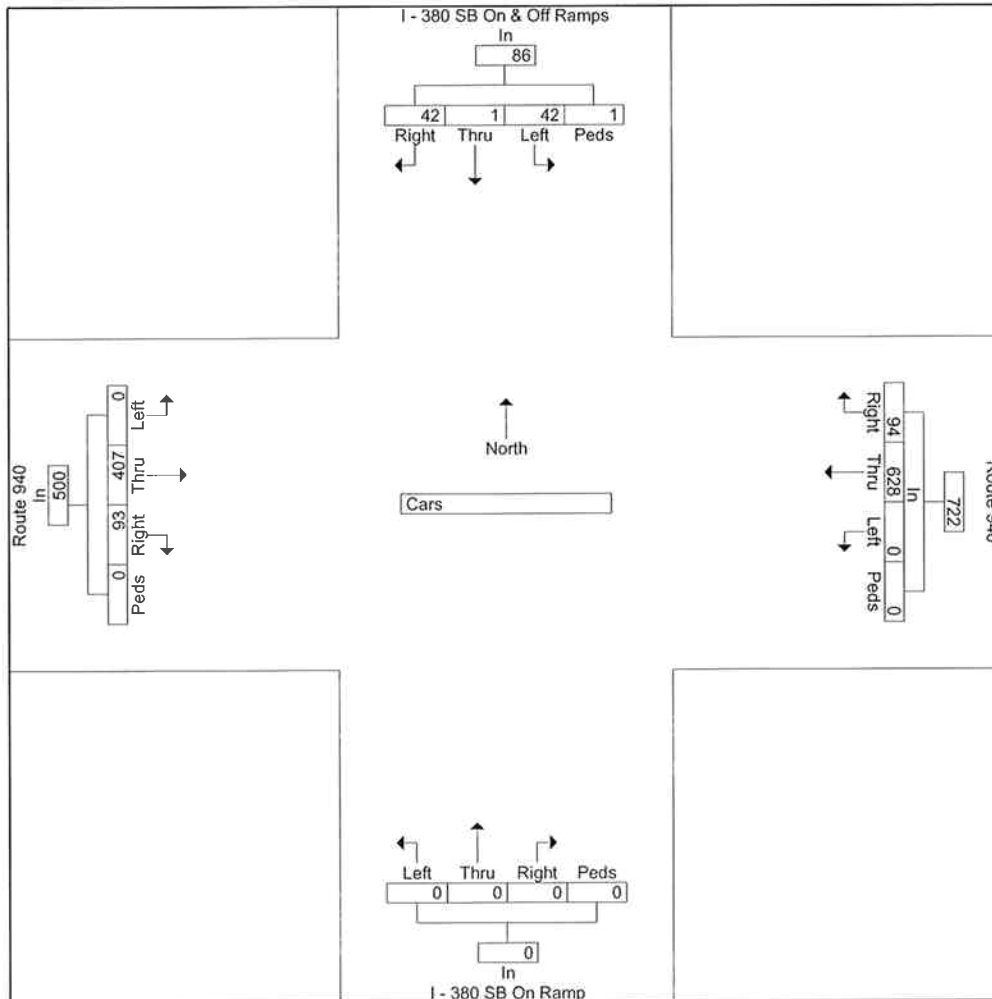
Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:00 PM					04:30 PM					04:00 PM					04:00 PM					
Volume	95	0	48	0	143	173	897	0	0	1070	0	0	0	0	0	148	625	0	0	773	
Percent	66.4	0.0	33.6	0.0		16.2	83.8	0.0	0.0		-	-	-	-		19.1	80.9	0.0	0.0		
High Int. Volume	04:15 PM					05:00 PM					-					04:15 PM					
Peak Factor	39	0	17	0	56	63	218	0	0	281	-	-	-	-	-	36	169	0	0	205	
					0.63					0.95										0.94	
					8					2										3	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : I380SB~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 4

Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	42	1	42	1	86	94	628	0	0	722	0	0	0	0	0	93	407	0	0	500	
Percent	48.8	1.2	48.8	1.2		13.0	87.0	0.0	0.0		-	-	-	-		18.6	81.4	0.0	0.0		
High Int. Peak Factor	06:30 PM					06:30 PM					06:15 PM					06:15 PM					
Volume	10	1	20	0	31	30	157	0	0	187	-	-	-	-	-	21	124	0	0	145	
	0.69					0.96					-					0.86					
	4					5					-					2					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: JT

File Name : BG1015-4  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 1

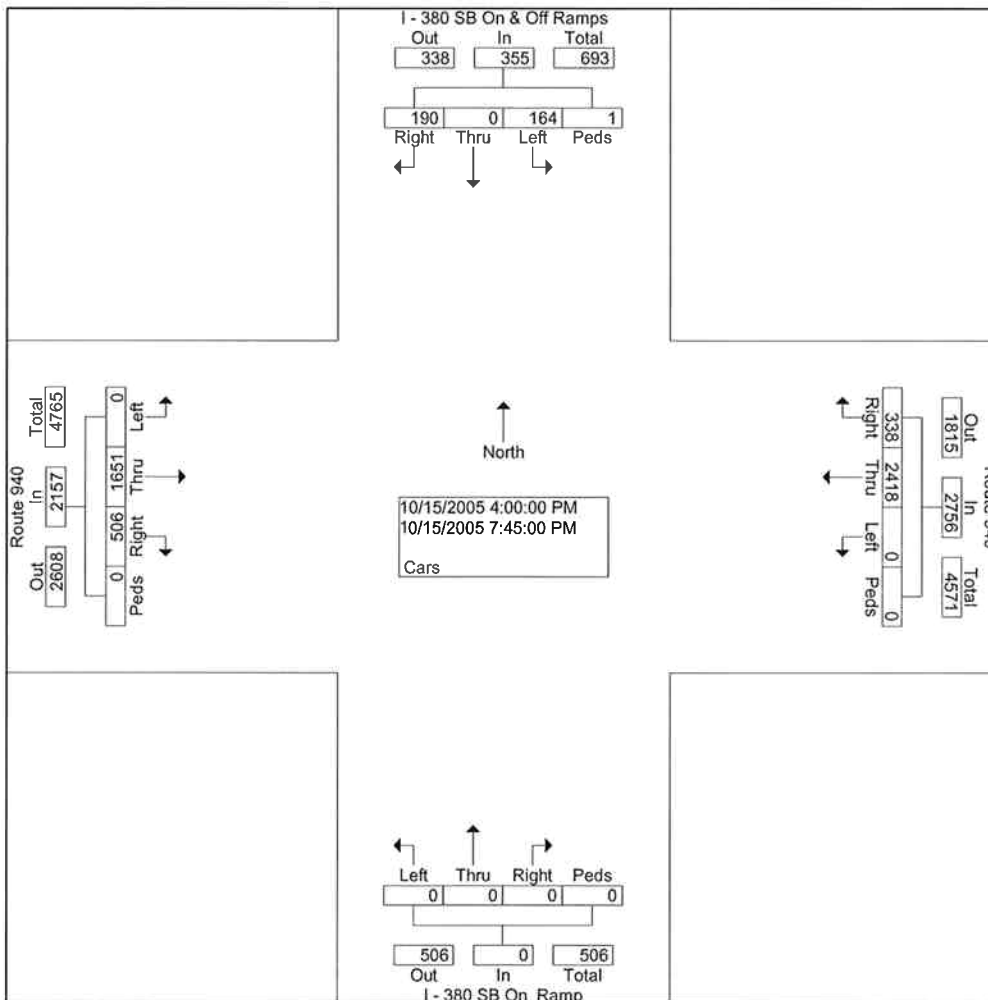
Groups Printed- Cars

Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	16	0	11	0	27	40	218	0	0	258	0	0	0	0	0	31	111	0	0	142	427
04:15 PM	19	0	10	0	29	30	197	0	0	227	0	0	0	0	0	51	118	0	0	169	425
04:30 PM	12	0	8	0	20	32	170	0	0	202	0	0	0	0	0	32	133	0	0	165	387
04:45 PM	16	0	4	1	21	20	170	0	0	190	0	0	0	0	0	32	106	0	0	138	349
Total	63	0	33	1	97	122	755	0	0	877	0	0	0	0	0	146	468	0	0	614	1588
05:00 PM	12	0	14	0	26	24	165	0	0	189	0	0	0	0	0	23	104	0	0	127	342
05:15 PM	17	0	12	0	29	23	159	0	0	182	0	0	0	0	0	38	128	0	0	166	377
05:30 PM	15	0	13	0	28	20	147	0	0	167	0	0	0	0	0	36	112	0	0	148	343
05:45 PM	5	0	5	0	10	16	157	0	0	173	0	0	0	0	0	29	123	0	0	152	335
Total	49	0	44	0	93	83	628	0	0	711	0	0	0	0	0	126	467	0	0	593	1397
06:00 PM	8	0	14	0	22	19	157	0	0	176	0	0	0	0	0	22	76	0	0	98	296
06:15 PM	14	0	13	0	27	14	153	0	0	167	0	0	0	0	0	32	93	0	0	125	319
06:30 PM	11	0	11	0	22	17	132	0	0	149	0	0	0	0	0	36	134	0	0	170	341
06:45 PM	12	0	8	0	20	14	130	0	0	144	0	0	0	0	0	40	101	0	0	141	305
Total	45	0	46	0	91	64	572	0	0	636	0	0	0	0	0	130	404	0	0	534	1261
07:00 PM	6	0	5	0	11	19	126	0	0	145	0	0	0	0	0	23	81	0	0	104	260
07:15 PM	9	0	9	0	18	14	115	0	0	129	0	0	0	0	0	27	81	0	0	108	255
07:30 PM	9	0	17	0	26	23	126	0	0	149	0	0	0	0	0	37	79	0	0	116	291
07:45 PM	9	0	10	0	19	13	96	0	0	109	0	0	0	0	0	17	71	0	0	88	216
Total	33	0	41	0	74	69	463	0	0	532	0	0	0	0	0	104	312	0	0	416	1022
Grand Total	190	0	164	1	355	338	2418	0	0	2756	0	0	0	0	0	506	1651	0	0	2157	5268
Apprch %	53.5	0.0	46.2	0.3		12.3	87.7	0.0	0.0		0.0	0.0	0.0	0.0		23.5	76.5	0.0	0.0		
Total %	3.6	0.0	3.1	0.0	6.7	6.4	45.9	0.0	0.0	52.3	0.0	0.0	0.0	0.0	0.0	9.6	31.3	0.0	0.0	40.9	

Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: JT

File Name : BG1015-4  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 2



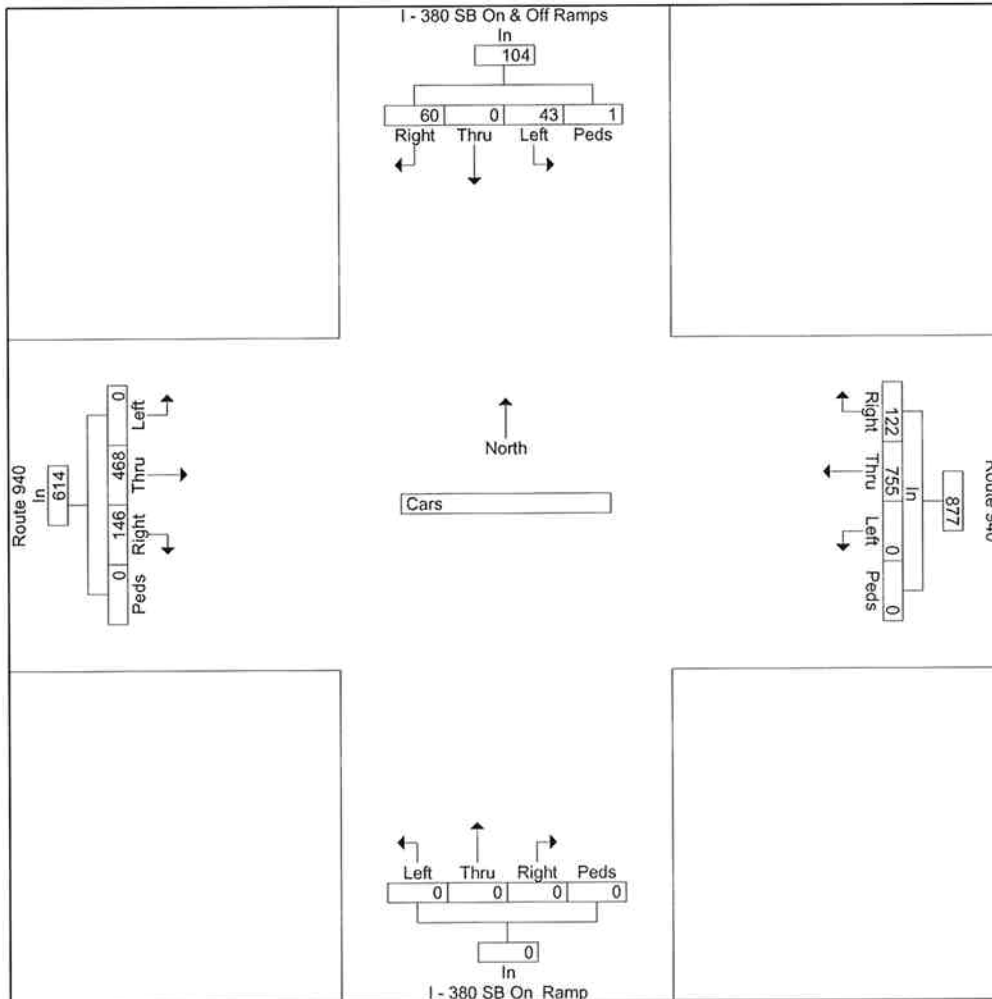


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: JT

File Name : BG1015-4  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 3

Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:45 PM					04:00 PM					04:00 PM					04:00 PM					
Volume	60	0	43	1	104	122	755	0	0	877	0	0	0	0	0	146	468	0	0	614	
Percent	57.7	0.0	41.3	1.0		13.9	86.1	0.0	0.0		-	-	-	-		23.8	76.2	0.0	0.0		
High Int.	05:15 PM					04:00 PM					04:15 PM										
Volume	17	0	12	0	29	40	218	0	0	258	-	-	-	-	-	51	118	0	0	169	
Peak Factor	0.897					0.850										0.908					

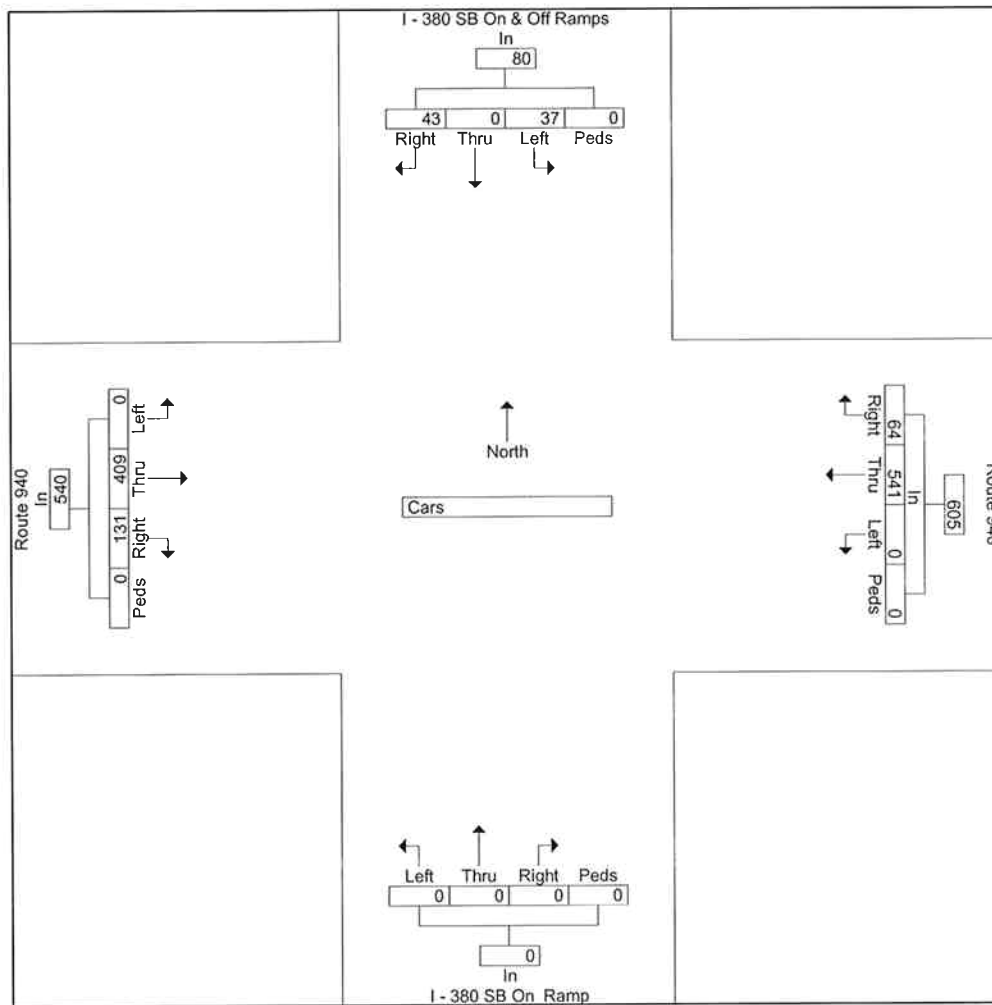


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 SB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: JT

File Name : BG1015-4  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 4

Start Time	I - 380 SB On & Off Ramps From North					Route 940 From East					I - 380 SB On Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	43	0	37	0	80	64	541	0	0	605	0	0	0	0	0	131	409	0	0	540	
Percent	53.8	0.0	46.3	0.0		10.6	89.4	0.0	0.0		-	-	-	-		24.3	75.7	0.0	0.0		
High Int.	06:15 PM					06:15 PM					06:30 PM										
Volume	14	0	13	0	27	14	153	0	0	167	-	-	-	-	-	36	134	0	0	170	
Peak Factor	0.741					0.906					-					0.794					



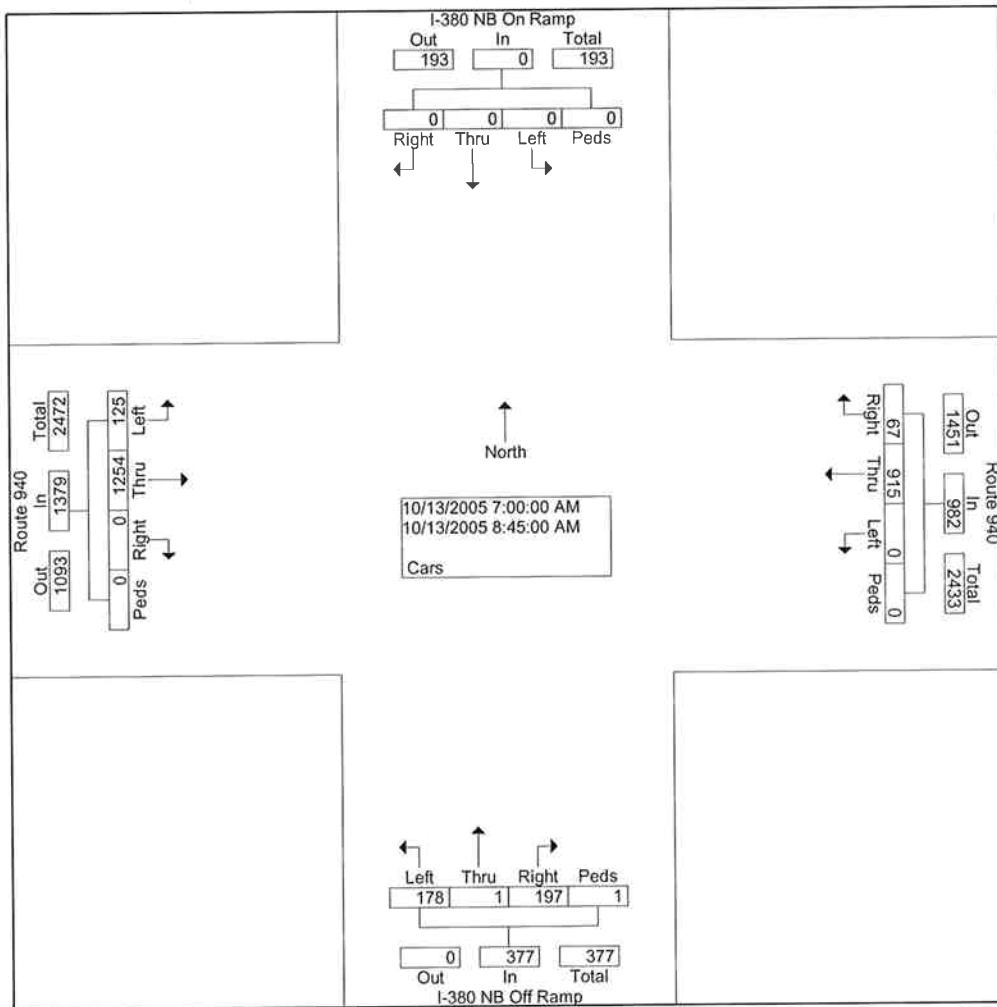
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 NB Ramps  
 Date: Thursday, October 13, 2005  
 Counter: ET

File Name : BG1013-3  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 1

Groups Printed- Cars

Start Time	I-380 NB On Ramp From North					Route 940 From East					I-380 NB Off Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	7	125	0	0	132	22	0	38	0	60	0	188	21	0	209	401
07:15 AM	0	0	0	0	0	7	142	0	0	149	24	0	27	0	51	0	164	30	0	194	394
07:30 AM	0	0	0	0	0	8	117	0	0	125	28	0	20	0	48	0	210	17	0	227	400
07:45 AM	0	0	0	0	0	11	97	0	0	108	29	0	15	0	44	0	181	13	0	194	346
Total	0	0	0	0	0	33	481	0	0	514	103	0	100	0	203	0	743	81	0	824	1541
08:00 AM	0	0	0	0	0	10	109	0	0	119	24	0	17	0	41	0	133	12	0	145	305
08:15 AM	0	0	0	0	0	7	100	0	0	107	19	0	18	0	37	0	139	16	0	155	299
08:30 AM	0	0	0	0	0	10	107	0	0	117	25	1	23	0	49	0	122	9	0	131	297
08:45 AM	0	0	0	0	0	7	118	0	0	125	26	0	20	1	47	0	117	7	0	124	296
Total	0	0	0	0	0	34	434	0	0	468	94	1	78	1	174	0	511	44	0	555	1197
Grand Total	0	0	0	0	0	67	915	0	0	982	197	1	178	1	377	0	1254	125	0	1379	2738
Apprch %	0.0	0.0	0.0	0.0		6.8	93.2	0.0	0.0		52.3	0.3	47.2	0.3		0.0	90.9	9.1	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	2.4	33.4	0.0	0.0	35.9	7.2	0.0	6.5	0.0	13.8	0.0	45.8	4.6	0.0	50.4	

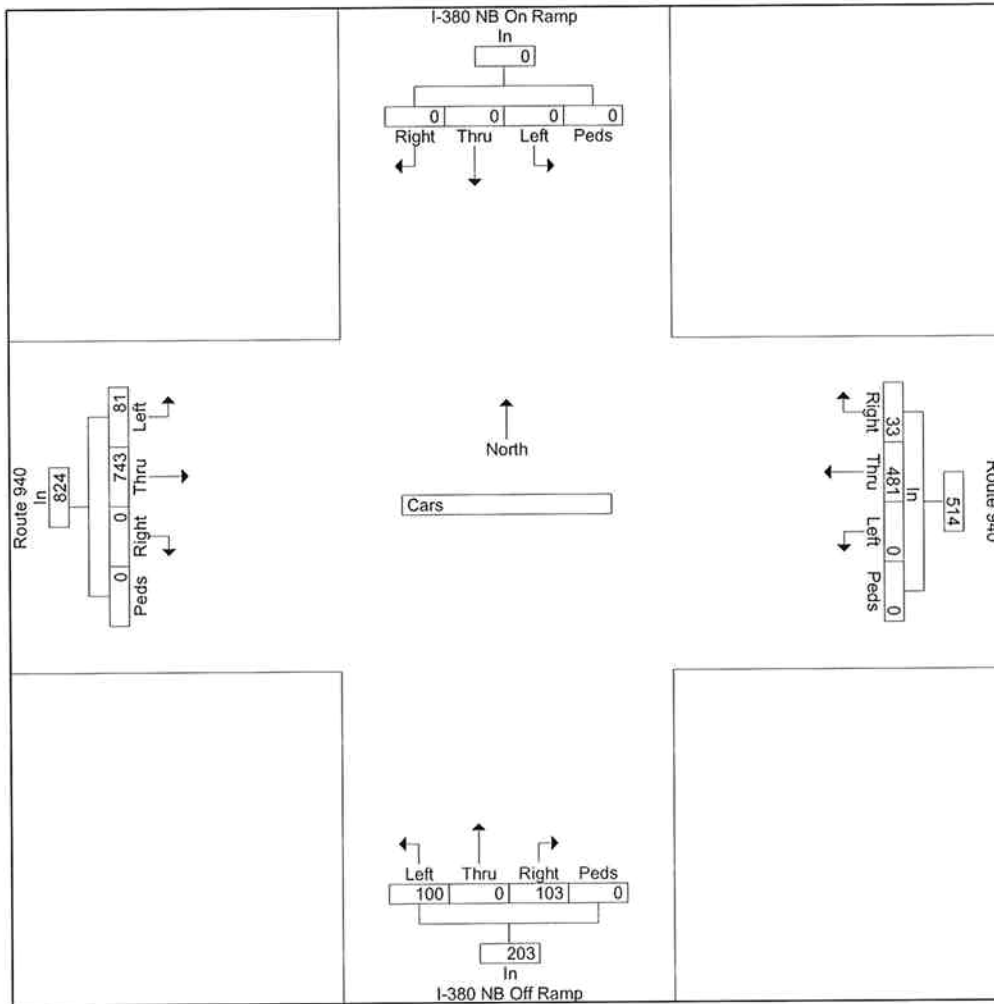


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 NB Ramps  
 Date: Thursday, October 13, 2005  
 Counter: ET

File Name : BG1013-3  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 2

Start Time	I-380 NB On Ramp From North					Route 940 From East					I-380 NB Off Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:00 AM					07:00 AM					07:00 AM					07:00 AM					
Volume	0	0	0	0	0	33	481	0	0	514	103	0	100	0	203	0	743	81	0	824	
Percent	-	-	-	-	-	6.4	93.6	0.0	0.0		50.7	0.0	49.3	0.0		0.0	90.2	9.8	0.0		
High Int.	-	-	-	-	-	07:15 AM					07:00 AM					07:30 AM					
Volume	-	-	-	-	-	7	142	0	0	149	22	0	38	0	60	0	210	17	0	227	
Peak Factor						0.862					0.846					0.907					



Tri-State Traffic Data, Inc.  
184 Baker Road

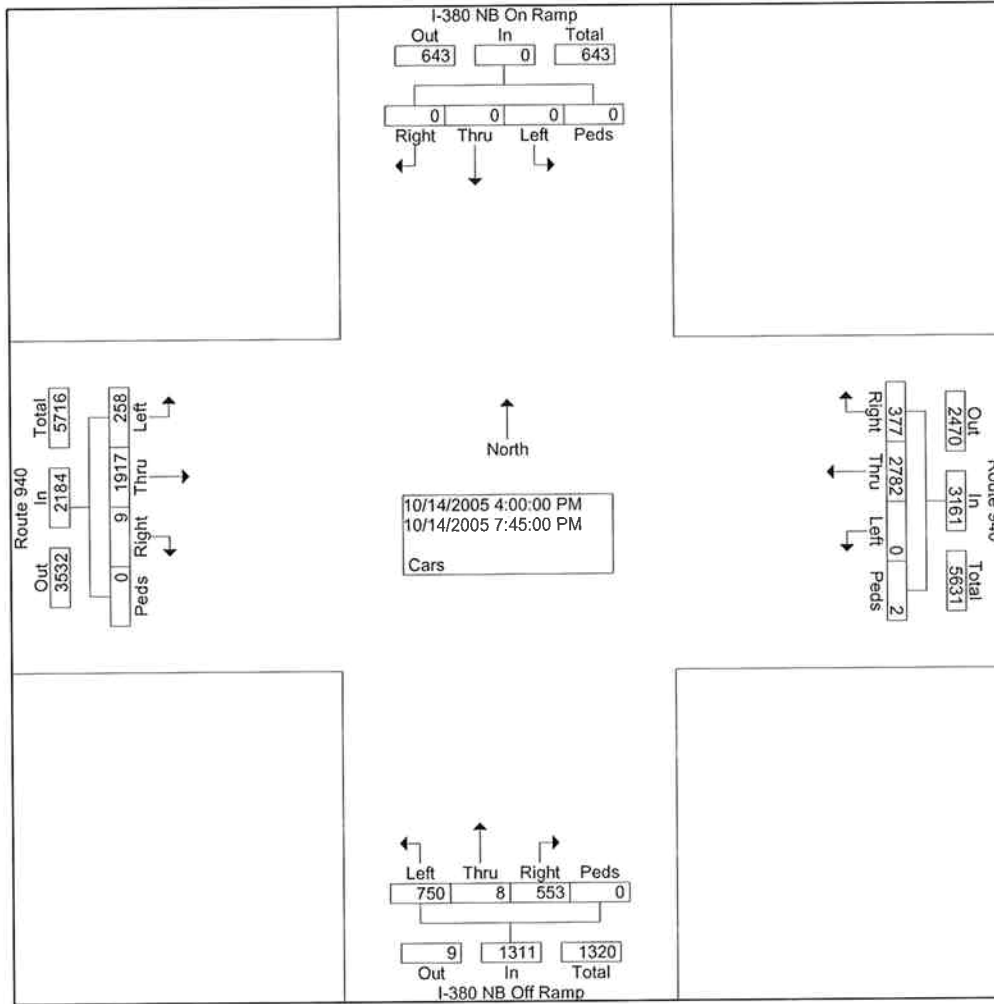
Location: Monroe Co., PA  
Intersection: Rt. 940 / I380 NB Ramps  
Date: Friday, October 14, 2005  
Counter: ET

Coatsville, PA 19320  
(610) 466-1469

File Name : I380NB~1  
Site Code : 00000000  
Start Date : 10/14/2005  
Page No : 1

Groups Printed- Cars

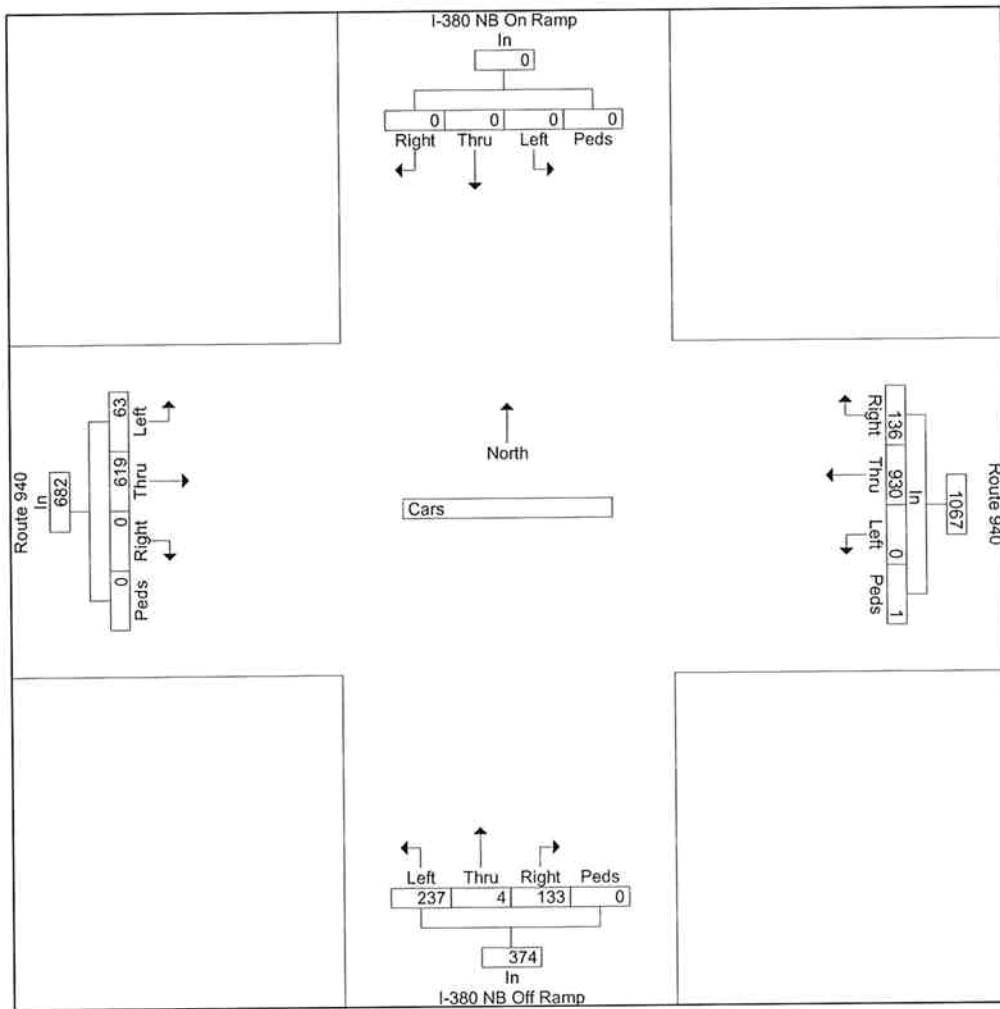
Start Time	I-380 NB On Ramp From North					Route 940 From East					I-380 NB Off Ramp From South					Route 940 From West					Int. Total				
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total					
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
04:00 PM	0	0	0	0	0	21	195	0	0	216	34	1	51	0	86	0	156	18	0	174	476				
04:15 PM	0	0	0	0	0	29	182	0	0	211	33	0	44	0	77	0	168	13	0	181	469				
04:30 PM	0	0	0	0	0	34	249	0	0	283	30	0	36	0	66	0	142	18	0	160	509				
04:45 PM	0	0	0	0	0	36	220	0	1	257	35	0	47	0	82	0	153	14	0	167	506				
Total	0	0	0	0	0	120	846	0	1	967	132	1	178	0	311	0	619	63	0	682	1960				
05:00 PM	0	0	0	0	0	30	249	0	0	279	28	1	45	0	74	0	142	14	0	156	509				
05:15 PM	0	0	0	0	0	36	212	0	0	248	37	1	65	0	103	0	142	23	0	165	516				
05:30 PM	0	0	0	0	0	28	208	0	0	236	25	1	53	0	79	0	137	16	0	153	468				
05:45 PM	0	0	0	0	0	32	187	0	0	219	36	2	54	0	92	9	106	21	0	136	447				
Total	0	0	0	0	0	126	856	0	0	982	126	5	217	0	348	9	527	74	0	610	1940				
06:00 PM	0	0	0	0	0	14	168	0	0	182	35	0	65	0	100	0	121	27	0	148	430				
06:15 PM	0	0	0	0	0	17	150	0	0	167	44	1	41	0	86	0	120	21	0	141	394				
06:30 PM	0	0	0	0	0	15	155	0	0	170	39	0	41	0	80	0	119	13	0	132	382				
06:45 PM	0	0	0	0	0	23	141	0	1	165	56	0	51	0	107	0	90	8	0	98	370				
Total	0	0	0	0	0	69	614	0	1	684	174	1	198	0	373	0	450	69	0	519	1576				
07:00 PM	0	0	0	0	0	19	129	0	0	148	39	0	37	0	76	0	85	8	0	93	317				
07:15 PM	0	0	0	0	0	22	134	0	0	156	20	0	43	0	63	0	96	17	0	113	332				
07:30 PM	0	0	0	0	0	11	109	0	0	120	33	1	52	0	86	0	84	19	0	103	309				
07:45 PM	0	0	0	0	0	10	94	0	0	104	29	0	25	0	54	0	56	8	0	64	222				
Total	0	0	0	0	0	62	466	0	0	528	121	1	157	0	279	0	321	52	0	373	1180				
Grand Total	0	0	0	0	0	377	2782	0	2	3161	553	8	750	0	1311	9	1917	258	0	2184	6656				
Apprch %	0.0	0.0	0.0	0.0		11.9	88.0	0.0	0.1		42.2	0.6	57.2	0.0		0.4	87.8	11.8	0.0						
Total %	0.0	0.0	0.0	0.0	0.0	5.7	41.8	0.0	0.0	47.5	8.3	0.1	11.3	0.0	19.7	0.1	28.8	3.9	0.0	32.8					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : I380NB~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 3

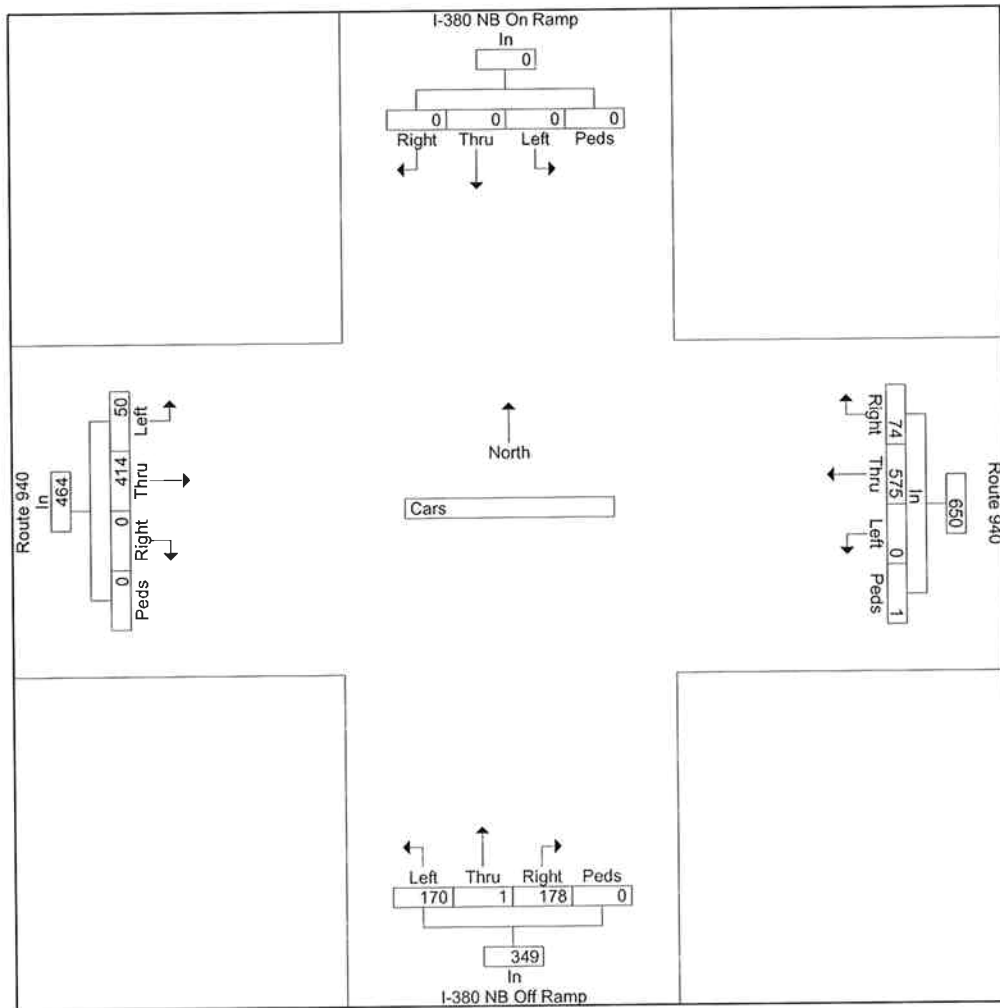
Start Time	I-380 NB On Ramp From North					Route 940 From East					I-380 NB Off Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:00 PM					04:30 PM					05:15 PM					04:00 PM					
Volume	0	0	0	0	0	136	930	0	1	1067	133	4	237	0	374	0	619	63	0	682	
Percent	-	-	-	-	-	12.7	87.2	0.0	0.1		35.6	1.1	63.4	0.0		0.0	90.8	9.2	0.0		
High Int. Volume	-	-	-	-	-	34	249	0	0	283	37	1	65	0	103	0	168	13	0	181	
Peak Factor	-	-	-	-	-	-	-	-	-	0.94	-	-	-	-	0.90	-	-	-	-	0.94	2



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : I380NB~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 4

Start Time	I-380 NB On Ramp From North					Route 940 From East					I-380 NB Off Ramp From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	0	0	0	0	0	74	575	0	1	650	178	1	170	0	349	0	414	50	0	464	
Percent	-	-	-	-	-	11.4	88.5	0.0	0.2		51.0	0.3	48.7	0.0		0.0	89.2	10.8	0.0		
High Int. Volume	-	-	-	-	-	06:30 PM					06:45 PM					06:15 PM					
Peak Factor	-	-	-	-	-	15	155	0	0	170	56	0	51	0	107	0	120	21	0	141	
										0.95					0.81					0.82	3





Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 NB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: ET

File Name : BG1015-3  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 1

Groups Printed- Cars

Start Time	I-380 NB On Ramp From North					Rout 940 From East					I-380 NB Off Ramp From South					Rout 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	0	0	0	0	0	13	211	0	0	224	33	0	51	0	84	0	103	17	0	120	428
04:15 PM	0	0	0	0	0	14	187	0	0	201	29	0	43	0	72	0	122	6	0	128	401
04:30 PM	0	0	0	0	0	17	174	0	0	191	30	0	33	0	63	0	126	11	0	137	391
04:45 PM	0	0	0	1	1	7	153	0	0	160	28	1	43	0	72	0	99	10	0	109	342
Total	0	0	0	1	1	51	725	0	0	776	120	1	170	0	291	0	450	44	0	494	1562
05:00 PM	0	0	0	0	0	9	153	0	0	162	37	0	38	0	75	0	108	16	0	124	361
05:15 PM	0	0	0	0	0	6	137	0	0	143	29	0	45	0	74	0	121	20	0	141	358
05:30 PM	0	0	0	0	0	6	130	0	0	136	31	0	41	0	72	0	112	12	0	124	332
05:45 PM	0	0	0	0	0	10	134	0	0	144	31	2	38	0	71	0	117	13	0	130	345
Total	0	0	0	0	0	31	554	0	0	585	128	2	162	0	292	0	458	61	0	519	1396
06:00 PM	0	0	0	0	0	15	141	0	0	156	41	0	31	0	72	0	92	4	0	96	324
06:15 PM	0	0	0	0	0	5	138	0	0	143	48	3	33	0	84	0	92	14	0	106	333
06:30 PM	0	0	0	0	0	11	110	0	0	121	33	1	42	0	76	0	139	9	0	148	345
06:45 PM	0	0	0	0	0	8	125	0	0	133	30	0	23	0	53	0	94	15	0	109	295
Total	0	0	0	0	0	39	514	0	0	553	152	4	129	0	285	0	417	42	0	459	1297
07:00 PM	0	0	0	0	0	19	119	0	0	138	26	0	32	0	58	0	76	10	0	86	282
07:15 PM	0	0	0	0	0	8	111	0	0	119	21	0	28	0	49	0	80	7	0	87	255
07:30 PM	0	0	0	0	0	4	128	0	0	132	24	0	22	0	46	0	86	11	0	97	275
07:45 PM	0	0	0	0	0	5	87	0	0	92	27	0	22	0	49	0	68	11	0	79	220
Total	0	0	0	0	0	36	445	0	0	481	98	0	104	0	202	0	310	39	0	349	1032
Grand Total	0	0	0	1	1	157	2238	0	0	2395	498	7	565	0	1070	0	1635	186	0	1821	5287
Apprch %	0.0	0.0	0.0	100.0		6.6	93.4	0.0	0.0		46.5	0.7	52.8	0.0		0.0	89.8	10.2	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	3.0	42.3	0.0	0.0	45.3	9.4	0.1	10.7	0.0	20.2	0.0	30.9	3.5	0.0	34.4	

Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe Co., PA

Intersection: Rt. 940 / I380 NB Ramps

Date: Saturday, October 15, 2005

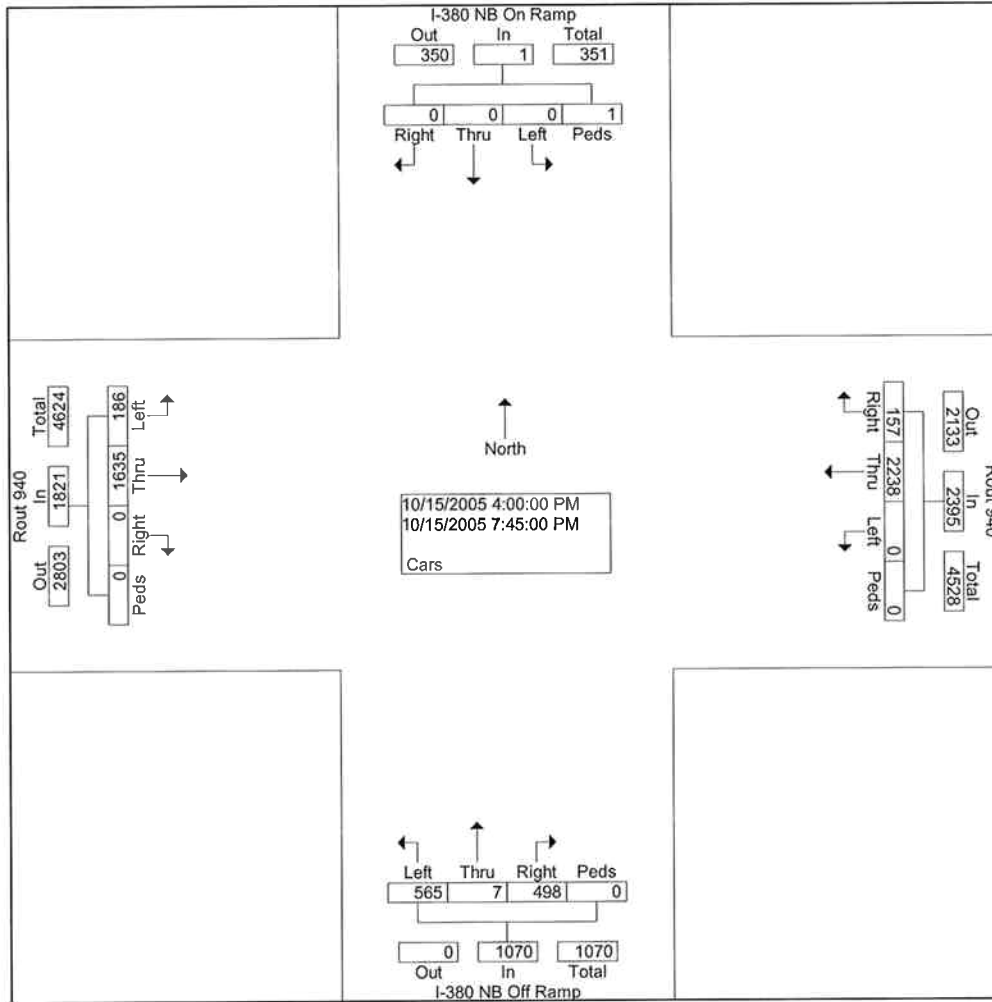
Counter: ET

File Name : BG1015-3

Site Code : 0000000

Start Date : 10/15/2005

Page No : 2

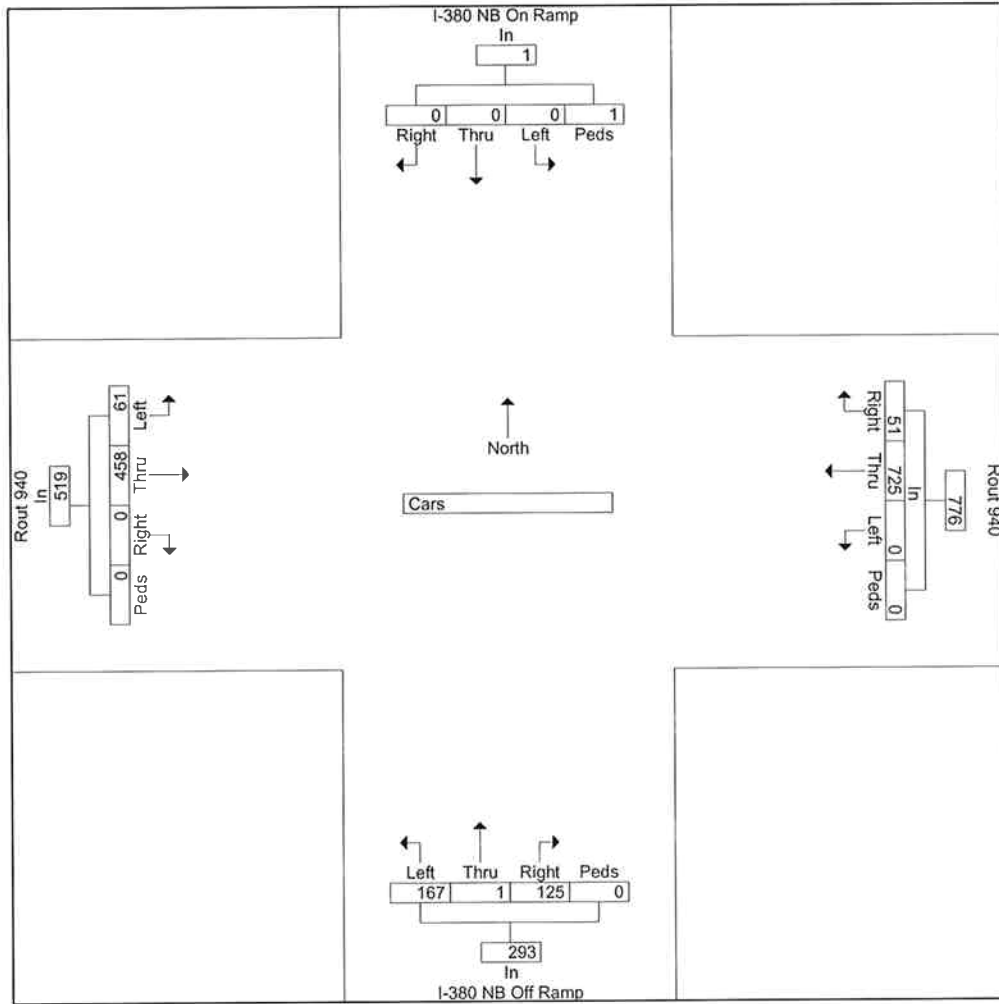


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 NB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: ET

File Name : BG1015-3  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 3

Start Time	I-380 NB On Ramp From North					Rout 940 From East					I-380 NB Off Ramp From South					Rout 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:00 PM					04:00 PM					04:45 PM					05:00 PM					
Volume	0	0	0	1	1	51	725	0	0	776	125	1	167	0	293	0	458	61	0	519	
Percent	0.0	0.0	0.0	100.0		6.6	93.4	0.0	0.0		42.7	0.3	57.0	0.0		0.0	88.2	11.8	0.0		
High Int. Peak Factor	04:45 PM					04:00 PM					05:00 PM					05:15 PM					
Volume	0	0	0	1	1	13	211	0	0	224	37	0	38	0	75	0	121	20	0	141	
						0.250					0.866					0.977					0.920

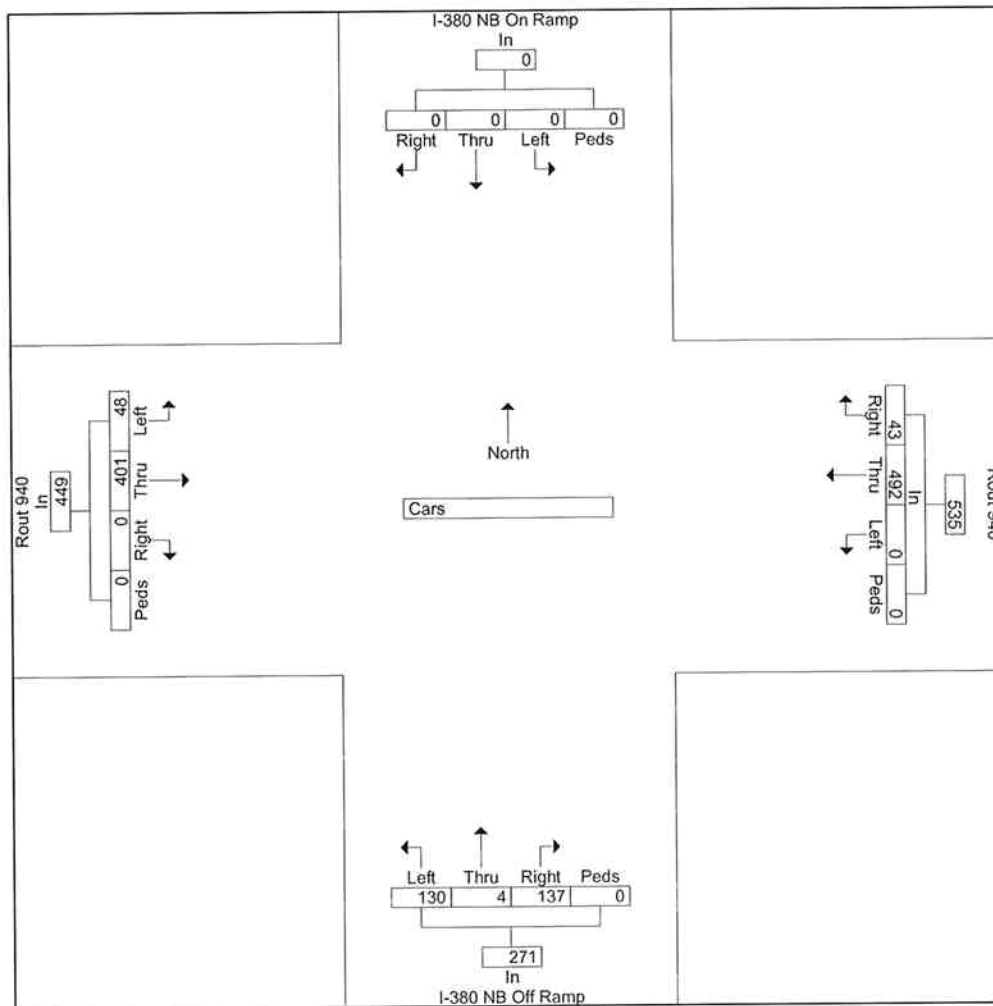


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co., PA  
 Intersection: Rt. 940 / I380 NB Ramps  
 Date: Saturday, October 15, 2005  
 Counter: ET

File Name : BG1015-3  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 4

Start Time	I-380 NB On Ramp From North					Rout 940 From East					I-380 NB Off Ramp From South					Rout 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	0	0	0	0	0	43	492	0	0	535	137	4	130	0	271	0	401	48	0	449	
Percent	-	-	-	-	-	8.0	92.0	0.0	0.0		50.6	1.5	48.0	0.0		0.0	89.3	10.7	0.0		
High Int.	-	-	-	-	-	06:15 PM					06:15 PM					06:30 PM					
Volume	-	-	-	-	-	5	138	0	0	143	48	3	33	0	84	0	139	9	0	148	
Peak Factor						0.935					0.807					0.758					



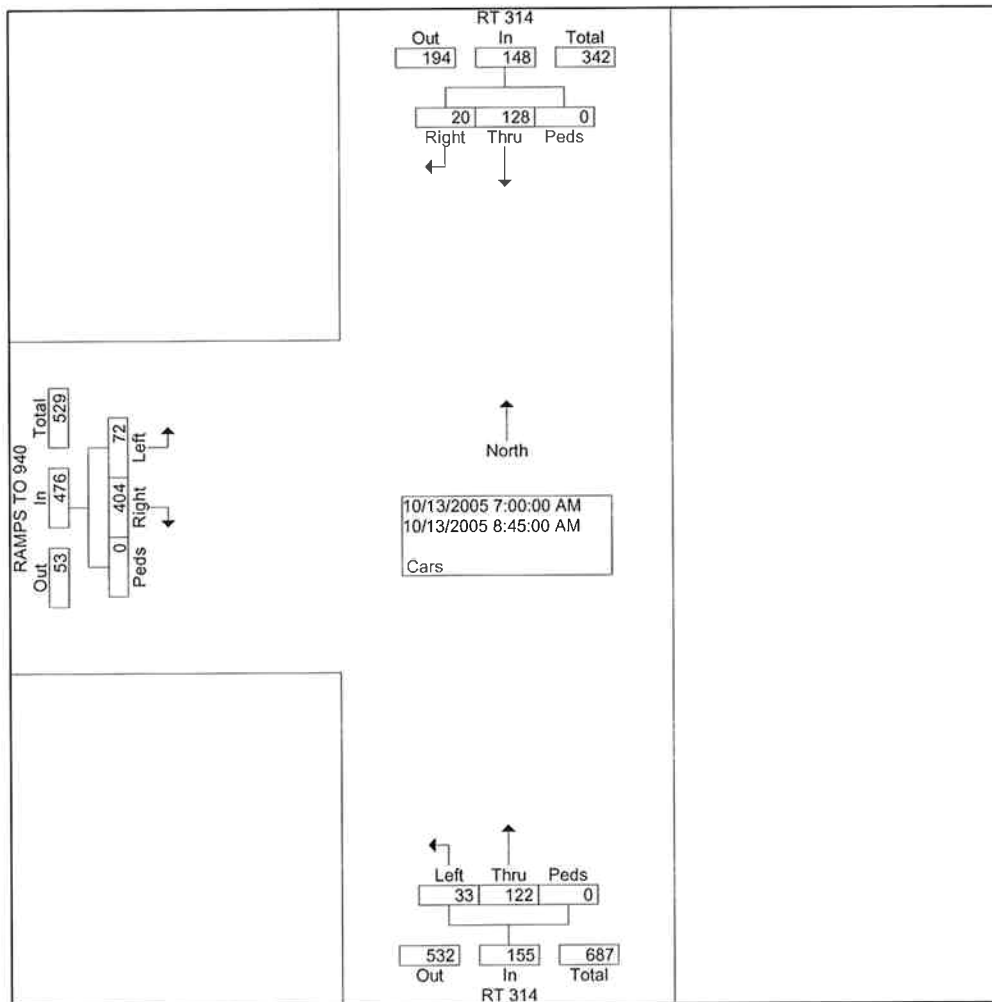
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Rt 314 / EB Ramps To 940  
 Date: Thursday October 13 2005  
 Counter: RZ

File Name : BG1013-5  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 1

Groups Printed- Cars

Start Time	RT 314 From North					RT 314 From South					RAMPS TO 940 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	1	13	0	0	14	0	11	3	0	14	68	0	5	0	73	101
07:15 AM	3	17	0	0	20	0	18	1	0	19	65	0	9	0	74	113
07:30 AM	2	18	0	0	20	0	20	3	0	23	78	0	10	0	88	131
07:45 AM	4	23	0	0	27	0	16	6	0	22	67	0	13	0	80	129
Total	10	71	0	0	81	0	65	13	0	78	278	0	37	0	315	474
08:00 AM	3	12	0	0	15	0	12	2	0	14	52	0	6	0	58	87
08:15 AM	3	20	0	0	23	0	17	3	0	20	28	0	5	0	33	76
08:30 AM	1	14	0	0	15	0	9	6	0	15	27	0	11	0	38	68
08:45 AM	3	11	0	0	14	0	19	9	0	28	19	0	13	0	32	74
Total	10	57	0	0	67	0	57	20	0	77	126	0	35	0	161	305
Grand Total	20	128	0	0	148	0	122	33	0	155	404	0	72	0	476	779
Apprch %	13.5	86.5	0.0	0.0		0.0	78.7	21.3	0.0		84.9	0.0	15.1	0.0		
Total %	2.6	16.4	0.0	0.0	19.0	0.0	15.7	4.2	0.0	19.9	51.9	0.0	9.2	0.0	61.1	



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt 314 / EB Ramps To 940

Date: Thursday October 13 2005

Counter: RZ

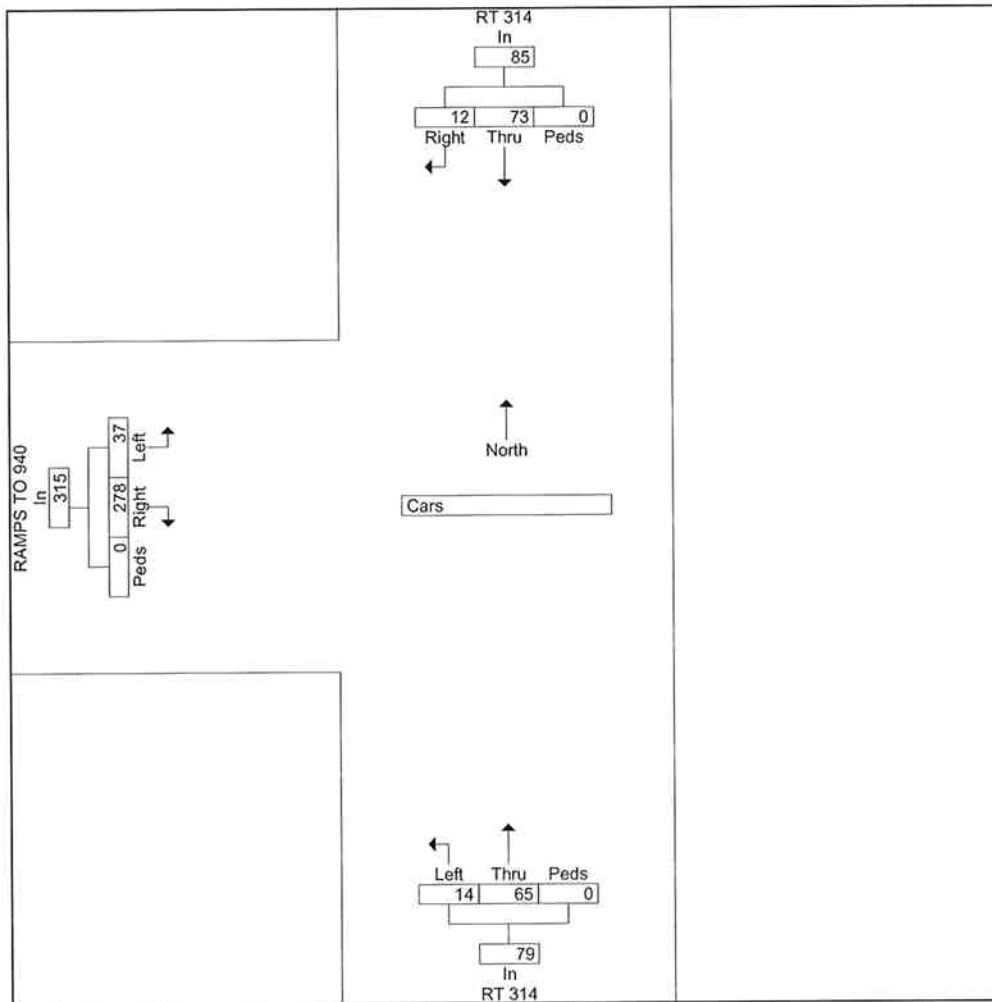
File Name : BG1013-5

Site Code : 00000000

Start Date : 10/13/2005

Page No : 2

Start Time	RT 314 From North					RT 314 From South					RAMPS TO 940 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																
By Approach	07:30 AM					07:30 AM					07:00 AM					
Volume	12	73	0	0	85	0	65	14	0	79	278	0	37	0	315	
Percent	14.1	85.9	0.0	0.0		0.0	82.3	17.7	0.0		88.3	0.0	11.7	0.0		
High Int.	07:45 AM					07:30 AM					07:30 AM					
Volume	4	23	0	0	27	0	20	3	0	23	78	0	10	0	88	
Peak Factor	0.787					0.859					0.895					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 /EB Ramps To 940  
 Date: Friday October 14 2005  
 Counter: RZ

File Name : 314&94~2  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 1

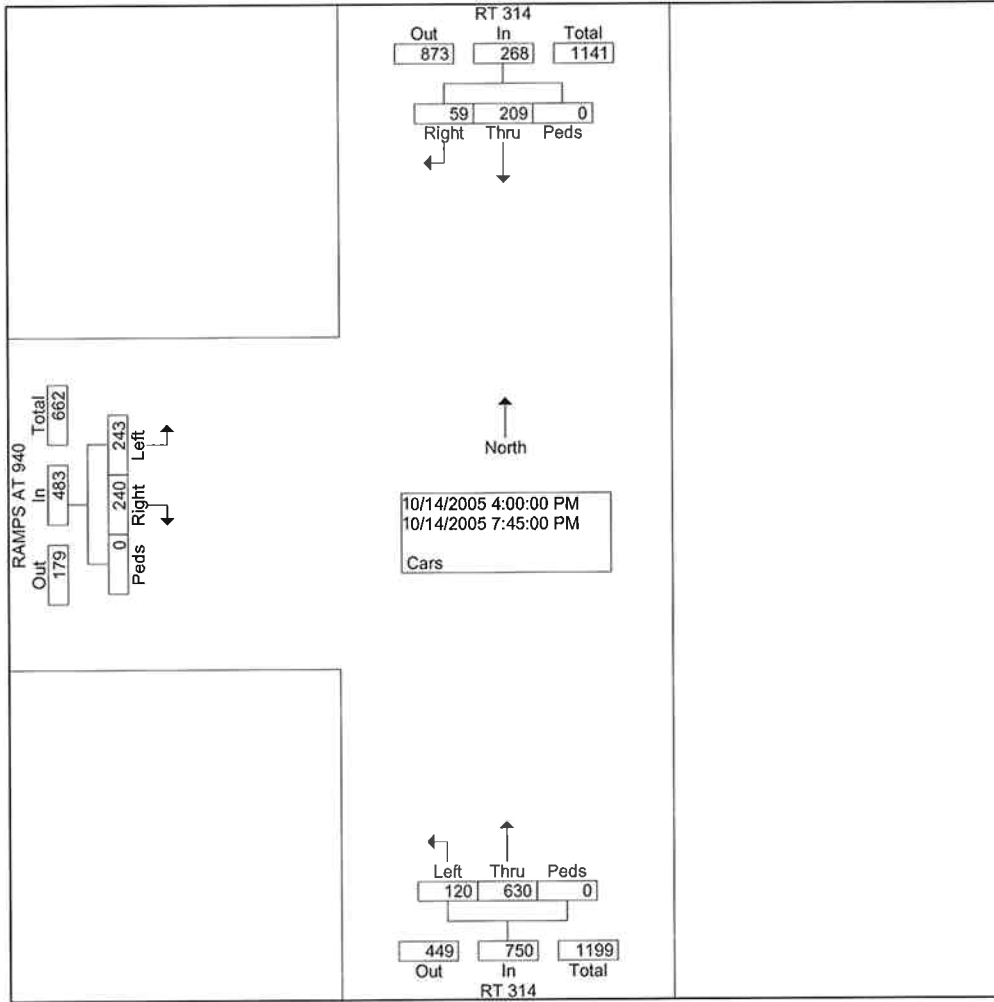
Groups Printed- Cars

Start Time	RT 314 From North					RT 314 From South					RAMPS AT 940 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	7	17	0	0	24	0	42	9	0	51	16	0	17	0	33	108
04:15 PM	7	17	0	0	24	0	54	7	0	61	19	0	13	0	32	117
04:30 PM	4	24	0	0	28	0	45	13	0	58	26	0	21	0	47	133
04:45 PM	6	13	0	0	19	0	81	11	0	92	12	0	21	0	33	144
Total	24	71	0	0	95	0	222	40	0	262	73	0	72	0	145	502
05:00 PM	4	15	0	0	19	0	56	9	0	65	17	0	17	0	34	118
05:15 PM	1	12	0	0	13	0	75	10	0	85	19	0	16	0	35	133
05:30 PM	4	17	0	0	21	0	49	11	0	60	23	0	14	0	37	118
05:45 PM	5	9	0	0	14	0	43	7	0	50	16	0	13	0	29	93
Total	14	53	0	0	67	0	223	37	0	260	75	0	60	0	135	462
06:00 PM	4	14	0	0	18	0	34	5	0	39	10	0	22	0	32	89
06:15 PM	3	9	0	0	12	0	25	3	0	28	16	0	16	0	32	72
06:30 PM	7	14	0	0	21	0	31	7	0	38	13	0	22	0	35	94
06:45 PM	3	10	0	0	13	0	18	10	0	28	15	0	15	0	30	71
Total	17	47	0	0	64	0	108	25	0	133	54	0	75	0	129	326
07:00 PM	0	12	0	0	12	0	19	5	0	24	6	0	7	0	13	49
07:15 PM	3	8	0	0	11	0	23	5	0	28	16	0	6	0	22	61
07:30 PM	0	7	0	0	7	0	17	4	0	21	12	0	11	0	23	51
07:45 PM	1	11	0	0	12	0	18	4	0	22	4	0	12	0	16	50
Total	4	38	0	0	42	0	77	18	0	95	38	0	36	0	74	211
Grand Total	59	209	0	0	268	0	630	120	0	750	240	0	243	0	483	1501
Apprch %	22.0	78.0	0.0	0.0		0.0	84.0	16.0	0.0		49.7	0.0	50.3	0.0		
Total %	3.9	13.9	0.0	0.0	17.9	0.0	42.0	8.0	0.0	50.0	16.0	0.0	16.2	0.0	32.2	

Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 / EB Ramps To 940  
 Date: Friday October 14 2005  
 Counter: RZ

File Name : 314&94~2  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 2



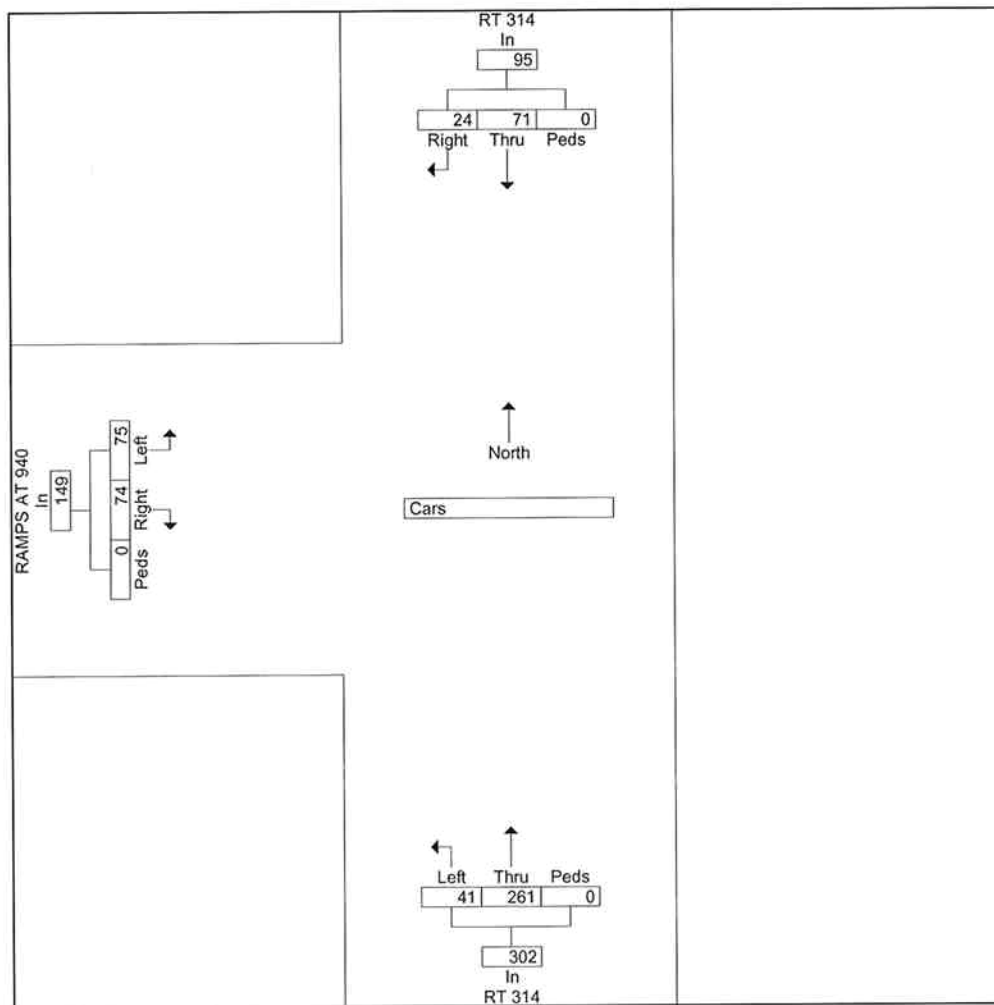


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 / EB Ramps To 940  
 Date: Friday October 14 2005  
 Counter: RZ

File Name : 314&94~2  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 3

Start Time	RT 314 From North					RT 314 From South					RAMPS AT 940 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach 04:00 PM						04:45 PM					04:30 PM					
Volume	24	71	0	0	95	0	261	41	0	302	74	0	75	0	149	
Percent	25.3	74.7	0.0	0.0		0.0	86.4	13.6	0.0		49.7	0.0	50.3	0.0		
High Int. 04:30 PM						04:45 PM					04:30 PM					
Volume	4	24	0	0	28	0	81	11	0	92	26	0	21	0	47	
Peak Factor	0.848					0.821					0.793					

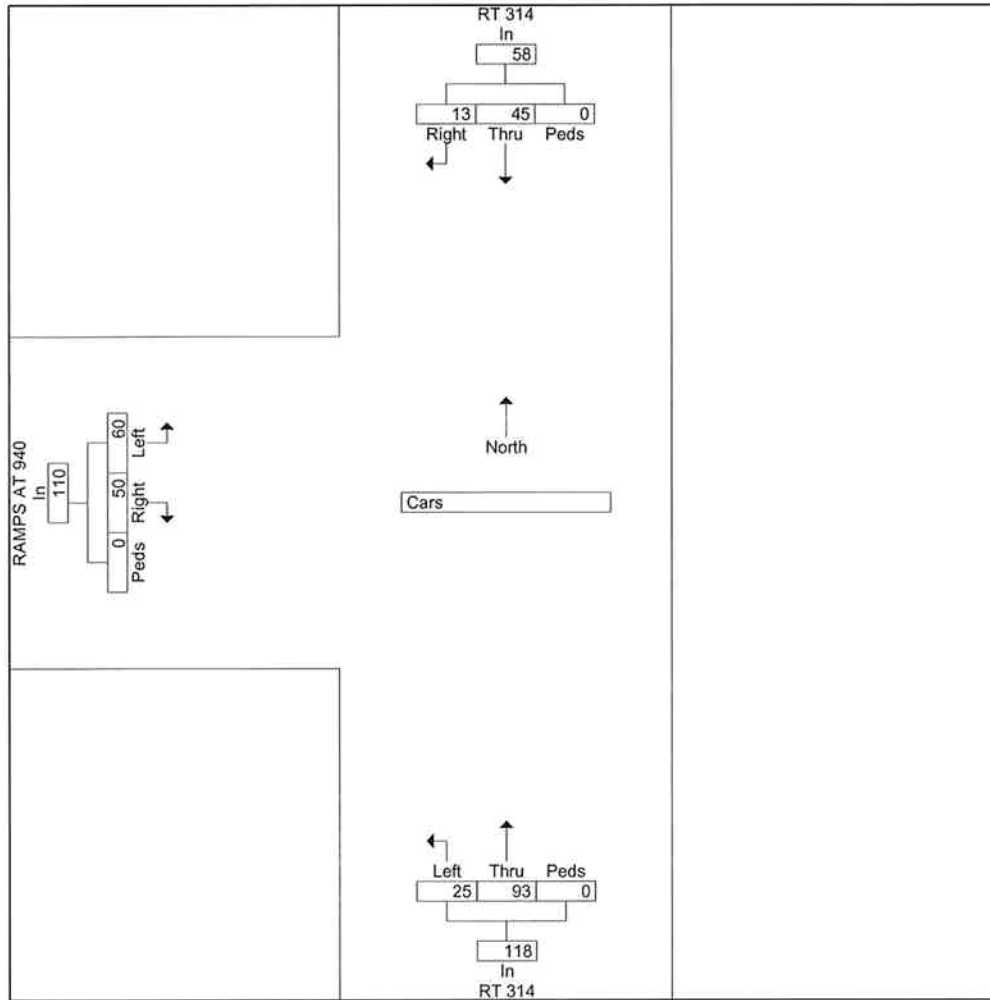


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 / EB Ramps To 940  
 Date: Friday October 14 2005  
 Counter: RZ

File Name : 314&94~2  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 4

Start Time	RT 314 From North					RT 314 From South					RAMPS AT 940 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																
By Approach 06:15 PM	06:15 PM					06:15 PM					06:15 PM					
Volume	13	45	0	0	58	0	93	25	0	118	50	0	60	0	110	
Percent	22.4	77.6	0.0	0.0		0.0	78.8	21.2	0.0		45.5	0.0	54.5	0.0		
High Int. 06:30 PM	06:30 PM					06:30 PM					06:30 PM					
Volume	7	14	0	0	21	0	31	7	0	38	13	0	22	0	35	
Peak Factor	0.690					0.776					0.786					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 /EB Ramps to 940  
 Date: Saturday October 15 2005  
 Counter: RZ

File Name : BG1015-5  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 1

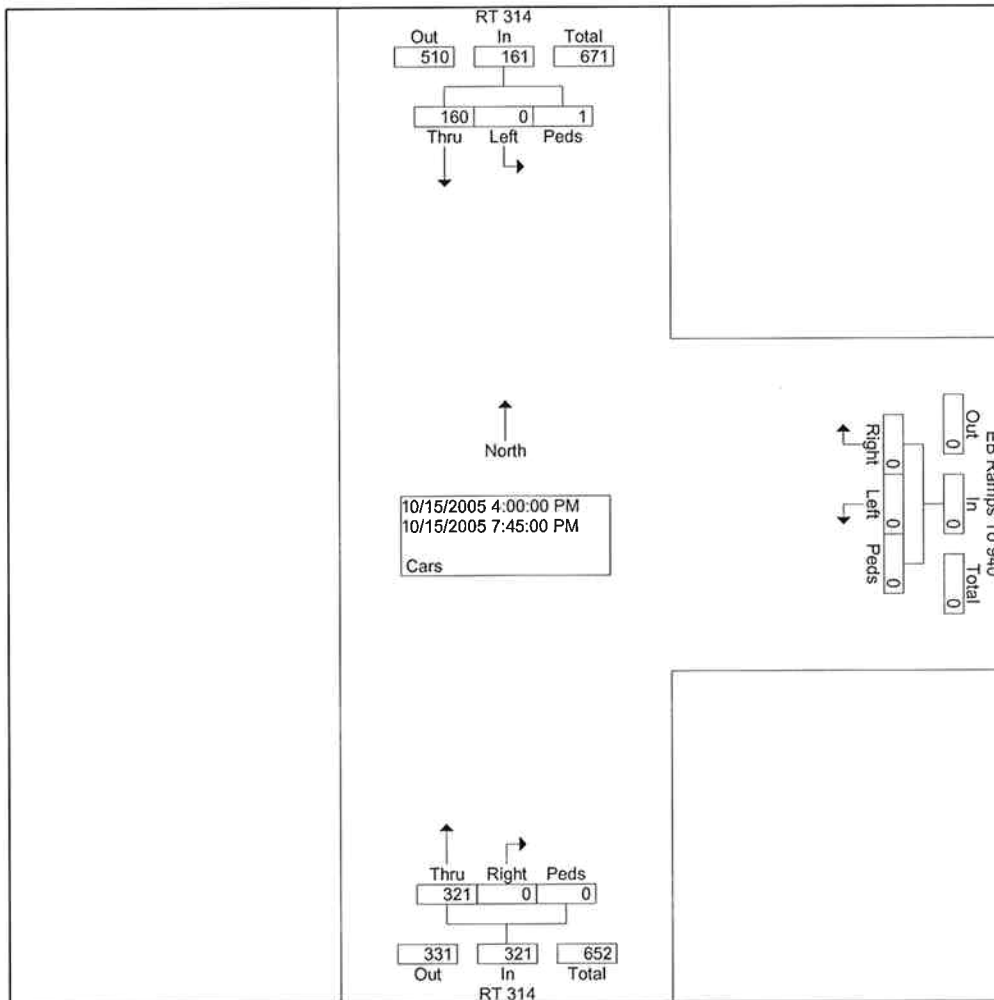
Groups Printed- Cars

Start Time	RT 314 From North					EB Ramps To 940 From East					RT 314 From South					EB RAMPS TO 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	4	7	0	0	11	0	0	0	0	0	0	37	5	0	42	13	0	12	0	25	78
04:15 PM	3	7	0	0	10	0	0	0	0	0	0	27	7	0	34	9	0	15	0	24	68
04:30 PM	4	14	0	0	18	0	0	0	0	0	0	24	7	0	31	18	0	11	0	29	78
04:45 PM	2	21	0	0	23	0	0	0	0	0	0	23	6	0	29	9	0	11	0	20	72
Total	13	49	0	0	62	0	0	0	0	0	0	111	25	0	136	49	0	49	0	98	296
05:00 PM	3	12	0	0	15	0	0	0	0	0	0	24	7	0	31	6	0	21	1	28	74
05:15 PM	4	8	0	1	13	0	0	0	0	0	0	17	8	0	25	14	0	12	0	26	64
05:30 PM	0	7	0	0	7	0	0	0	0	0	0	25	6	0	31	12	0	11	0	23	61
05:45 PM	3	18	0	0	21	0	0	0	0	0	0	19	5	0	24	7	0	7	0	14	59
Total	10	45	0	1	56	0	0	0	0	0	0	85	26	0	111	39	0	51	1	91	258
06:00 PM	6	10	0	0	16	0	0	0	0	0	0	24	4	0	28	12	0	11	0	23	67
06:15 PM	5	9	0	0	14	0	0	0	0	0	0	16	0	0	16	12	0	12	0	24	54
06:30 PM	1	12	0	0	13	0	0	0	0	0	0	10	8	0	18	21	0	18	0	39	70
06:45 PM	2	11	0	0	13	0	0	0	0	0	0	18	5	0	23	12	0	19	0	31	67
Total	14	42	0	0	56	0	0	0	0	0	0	68	17	0	85	57	0	60	0	117	258
07:00 PM	1	9	0	0	10	0	0	0	0	0	0	16	6	0	22	5	0	7	0	12	44
07:15 PM	1	5	0	0	6	0	0	0	0	0	0	12	2	0	14	7	0	7	0	14	34
07:30 PM	2	6	0	0	8	0	0	0	0	0	0	13	3	0	16	4	0	7	0	11	35
07:45 PM	2	4	0	0	6	0	0	0	0	0	0	16	2	0	18	10	0	8	0	18	42
Total	6	24	0	0	30	0	0	0	0	0	0	57	13	0	70	26	0	29	0	55	155
Grand Total	43	160	0	1	204	0	0	0	0	0	0	321	81	0	402	171	0	189	1	361	967
Apprch %	21.1	78.4	0.0	0.5		0.0	0.0	0.0	0.0		0.0	79.9	20.1	0.0		47.4	0.0	52.4	0.3		
Total %	4.4	16.5	0.0	0.1	21.1	0.0	0.0	0.0	0.0	0.0	0.0	33.2	8.4	0.0	41.6	17.7	0.0	19.5	0.1	37.3	

Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 /EB Ramps to 940  
 Date: Saturday October 15 2005  
 Counter: RZ

File Name : BG1015-5  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 2

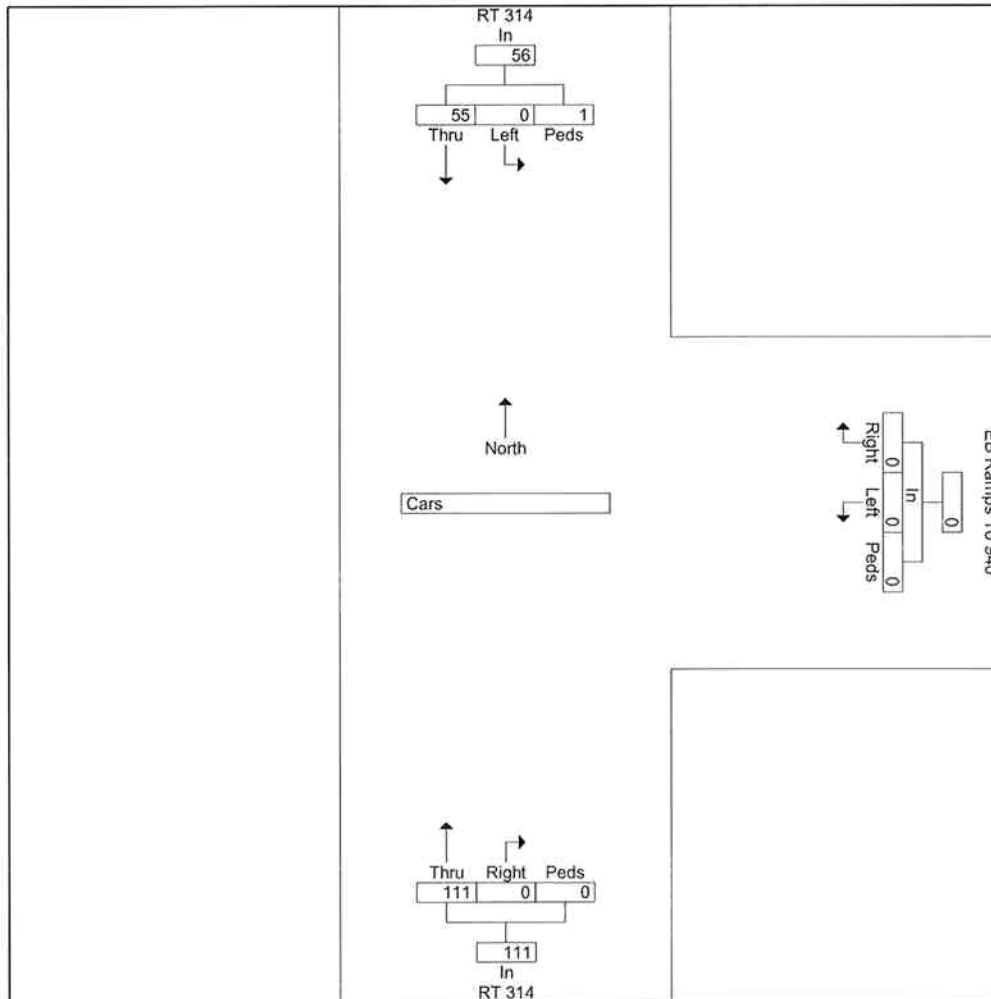


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 /EB Ramps to 940  
 Date: Saturday October 15 2005  
 Counter: RZ

File Name : BG1015-5  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 3

Start Time	RT 314 From North					EB Ramps To 940 From East					RT 314 From South					EB RAMPS TO 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:30 PM					04:00 PM					04:00 PM					04:30 PM					
Volume	13	55	0	1	69	0	0	0	0	0	0	111	25	0	136	47	0	55	1	103	
Percent	18.8	79.7	0.0	1.4		-	-	-	-	-	0.0	81.6	18.4	0.0		45.6	0.0	53.4	1.0		
High Int.	04:45 PM										04:00 PM					04:30 PM					
Volume	2	21	0	0	23	-	-	-	-	-	0	37	5	0	42	18	0	11	0	29	
Peak Factor	0.750															0.810					0.888

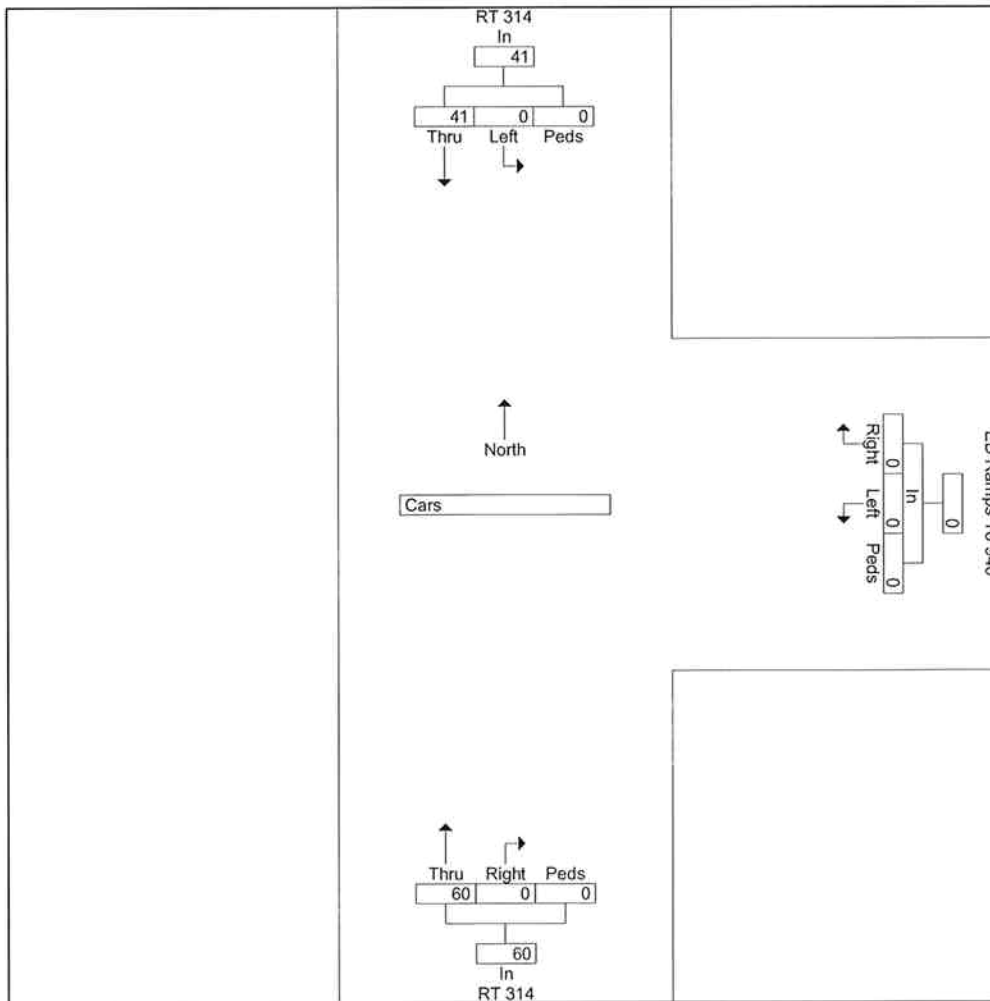


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co, PA  
 Intersection: Rt 314 /EB Ramps to 940  
 Date: Saturday October 15 2005  
 Counter: RZ

File Name : BG1015-5  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 4

Start Time	RT 314 From North					EB Ramps To 940 From East					RT 314 From South					EB RAMPS TO 940 From West					Int. Total
	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	Rig ht	Thru	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	9	41	0	0	50	0	0	0	0	0	0	60	19	0	79	50	0	56	0	106	
Percent	18.0	82.0	0.0	0.0	-	-	-	-	-	-	0.0	75.9	24.1	0.0	-	47.2	0.0	52.8	0.0	-	
High Int.	06:15 PM					-					06:45 PM					06:30 PM					
Volume	5	9	0	0	14	-	-	-	-	-	0	18	5	0	23	21	0	18	0	39	
Peak Factor	0.893					-					-					0.859					0.679



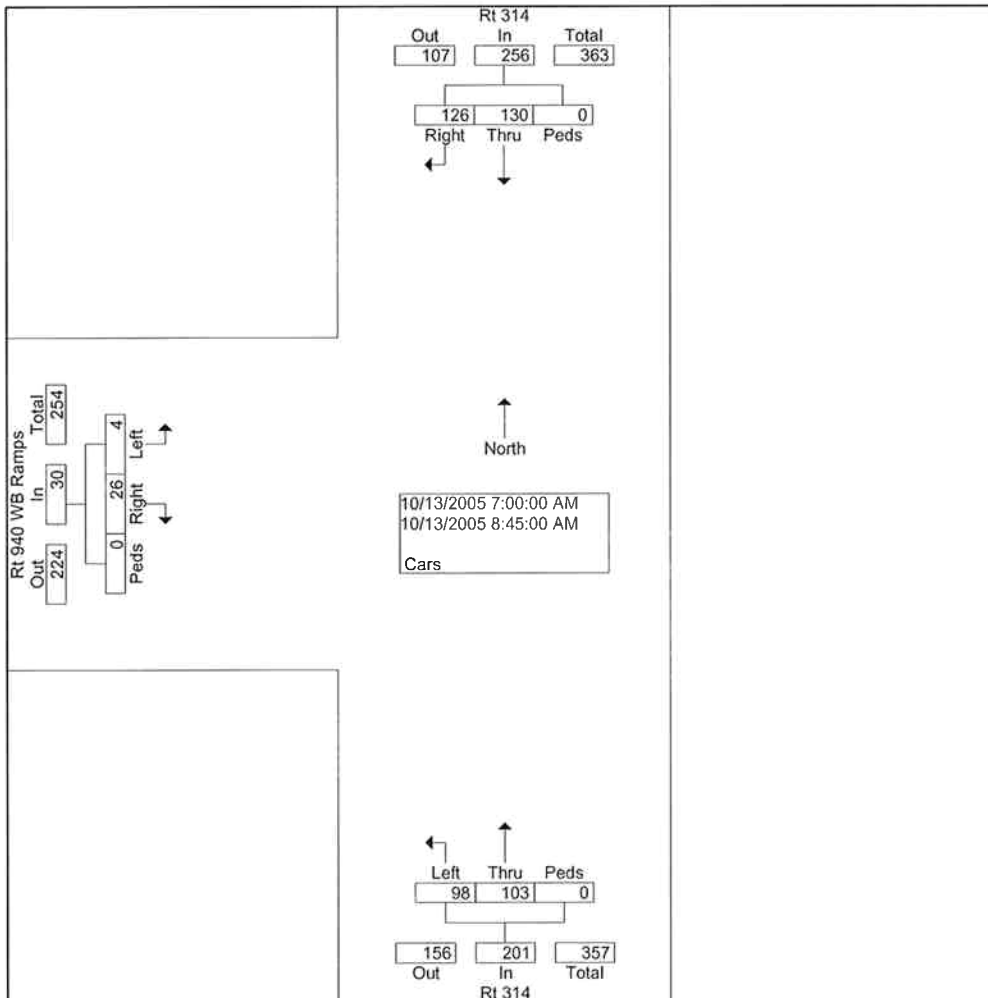
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co.  
 Intersection: RT 314 / Rt 490 North Ramp  
 Date: Thursday, October 13, 2005  
 Counter: JI

File Name : BG1013-6  
 Site Code : 00000000  
 Start Date : 10/13/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Rt 314 From North					Rt 314 From South					Rt 940 WB Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	16	18	0	0	34	0	5	12	0	17	3	0	0	0	3	54
07:15 AM	19	17	0	0	36	0	13	16	0	29	1	0	1	0	2	67
07:30 AM	15	16	0	0	31	0	14	14	0	28	3	0	0	0	3	62
07:45 AM	9	24	0	0	33	0	16	12	0	28	4	0	0	0	4	65
Total	59	75	0	0	134	0	48	54	0	102	11	0	1	0	12	248
08:00 AM	12	13	0	0	25	0	11	11	0	22	3	0	1	0	4	51
08:15 AM	16	20	0	0	36	0	11	13	0	24	5	0	1	0	6	66
08:30 AM	23	12	0	0	35	0	12	7	0	19	3	0	1	0	4	58
08:45 AM	16	10	0	0	26	0	21	13	0	34	4	0	0	0	4	64
Total	67	55	0	0	122	0	55	44	0	99	15	0	3	0	18	239
Grand Total	126	130	0	0	256	0	103	98	0	201	26	0	4	0	30	487
Apprch %	49.2	50.8	0.0	0.0		0.0	51.2	48.8	0.0		86.7	0.0	13.3	0.0		
Total %	25.9	26.7	0.0	0.0	52.6	0.0	21.1	20.1	0.0	41.3	5.3	0.0	0.8	0.0	6.2	



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe Co.

Intersection: RT 314 / Rt 490 North Ramp

Date: Thursday, October 13, 2005

Counter: JI

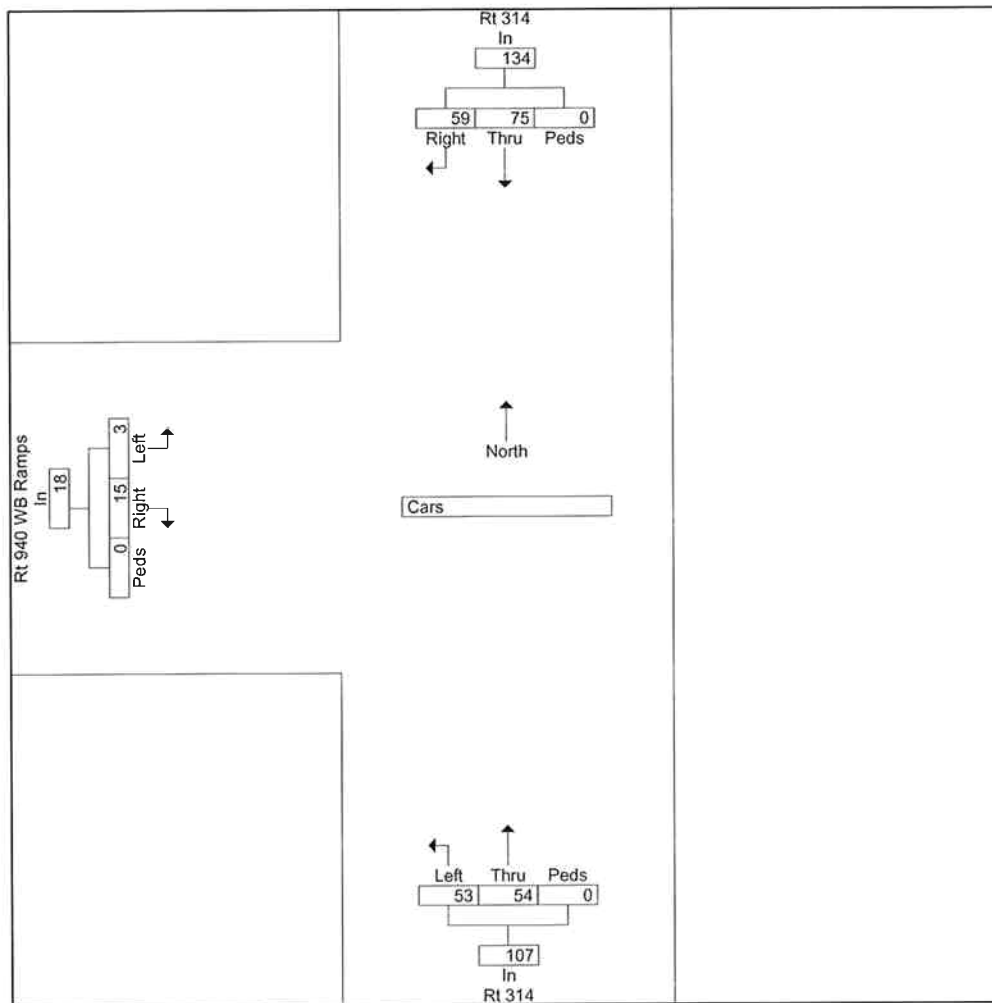
File Name : BG1013-6

Site Code : 00000000

Start Date : 10/13/2005

Page No : 2

Start Time	Rt 314 From North					Rt 314 From South					Rt 940 WB Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																
By Approach 07:00 AM						07:15 AM					07:45 AM					
Volume	59	75	0	0	134	0	54	53	0	107	15	0	3	0	18	
Percent	44.0	56.0	0.0	0.0		0.0	50.5	49.5	0.0		83.3	0.0	16.7	0.0		
High Int. 07:15 AM						07:15 AM					08:15 AM					
Volume	19	17	0	0	36	0	13	16	0	29	5	0	1	0	6	
Peak Factor	0.931										0.922					0.750





Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 / Rt 940  
 Date: Friday: October 14, 2005  
 Counter: JI

File Name : 314&94~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 1

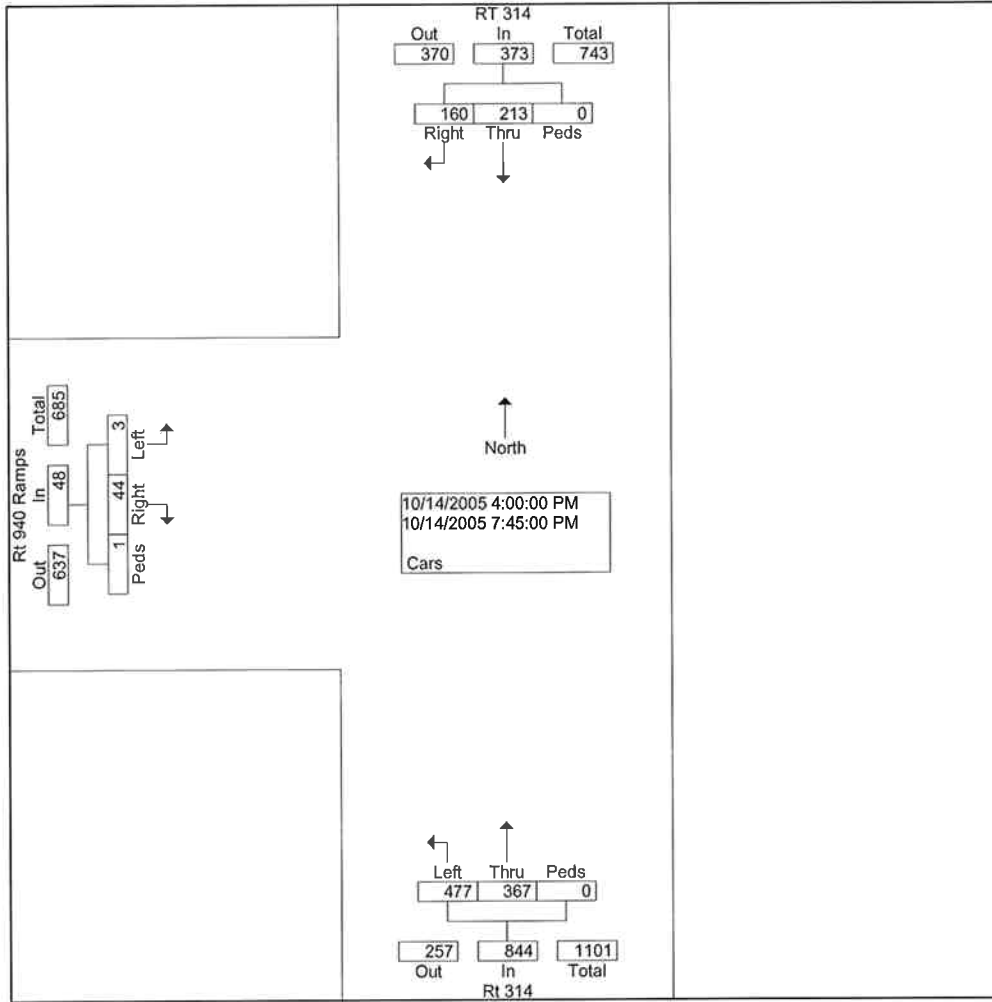
Groups Printed- Cars

Start Time	RT 314 From North					Rt 314 From South					Rt 940 Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	11	19	0	0	30	0	24	54	0	78	3	0	0	0	3	111
04:15 PM	11	18	0	0	29	0	24	30	0	54	3	0	0	0	3	86
04:30 PM	9	18	0	0	27	0	16	19	0	35	2	0	0	0	2	64
04:45 PM	10	20	0	0	30	0	37	64	0	101	2	0	1	0	3	134
Total	41	75	0	0	116	0	101	167	0	268	10	0	1	0	11	395
05:00 PM	19	11	0	0	30	0	23	52	0	75	6	0	0	1	7	112
05:15 PM	11	13	0	0	24	0	28	58	0	86	3	0	0	0	3	113
05:30 PM	12	17	0	0	29	0	28	39	0	67	4	0	0	0	4	100
05:45 PM	15	10	0	0	25	0	20	34	0	54	4	0	0	0	4	83
Total	57	51	0	0	108	0	99	183	0	282	17	0	0	1	18	408
06:00 PM	4	13	0	0	17	0	28	30	0	58	3	0	2	0	5	80
06:15 PM	10	12	0	0	22	0	23	17	0	40	1	0	0	0	1	63
06:30 PM	19	21	0	0	40	0	33	16	0	49	0	0	0	0	0	89
06:45 PM	7	10	0	0	17	0	22	13	0	35	1	0	0	0	1	53
Total	40	56	0	0	96	0	106	76	0	182	5	0	2	0	7	285
07:00 PM	4	9	0	0	13	0	13	12	0	25	4	0	0	0	4	42
07:15 PM	5	8	0	0	13	0	12	17	0	29	2	0	0	0	2	44
07:30 PM	8	6	0	0	14	0	18	13	0	31	3	0	0	0	3	48
07:45 PM	5	8	0	0	13	0	18	9	0	27	3	0	0	0	3	43
Total	22	31	0	0	53	0	61	51	0	112	12	0	0	0	12	177
Grand Total	160	213	0	0	373	0	367	477	0	844	44	0	3	1	48	1265
Apprch %	42.9	57.1	0.0	0.0		0.0	43.5	56.5	0.0		91.7	0.0	6.3	2.1		
Total %	12.6	16.8	0.0	0.0	29.5	0.0	29.0	37.7	0.0	66.7	3.5	0.0	0.2	0.1	3.8	

Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 / Rt 940  
 Date: Friday: October 14, 2005  
 Counter: JI

File Name : 314&94~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 2

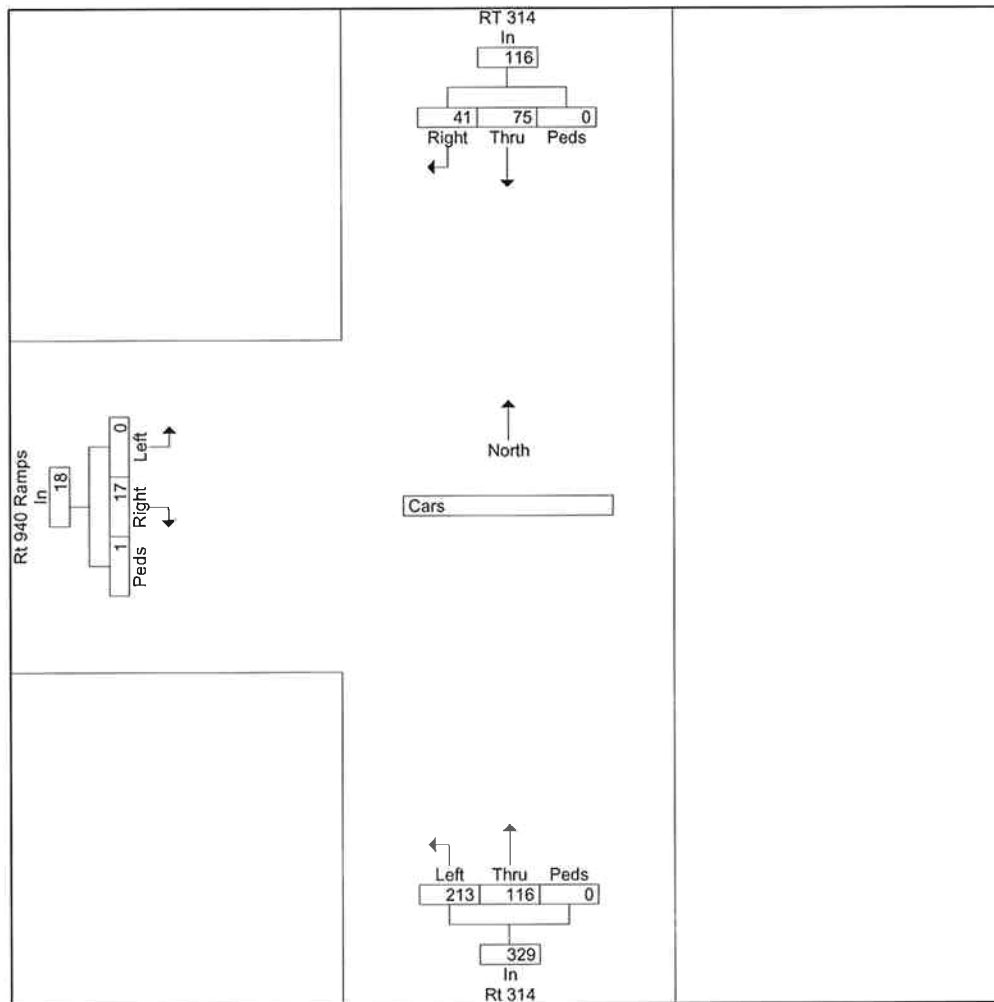


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 / Rt 940  
 Date: Friday: October 14, 2005  
 Counter: JI

File Name : 314&94~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 3

Start Time	RT 314 From North					Rt 314 From South					Rt 940/Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach 04:00 PM						04:45 PM					05:00 PM					
Volume	41	75	0	0	116	0	116	213	0	329	17	0	0	1	18	
Percent	35.3	64.7	0.0	0.0		0.0	35.3	64.7	0.0		94.4	0.0	0.0	5.6		
High Int. 04:00 PM						04:45 PM					05:00 PM					
Volume	11	19	0	0	30	0	37	64	0	101	6	0	0	1	7	
Peak Factor	0.967					0.814					0.643					

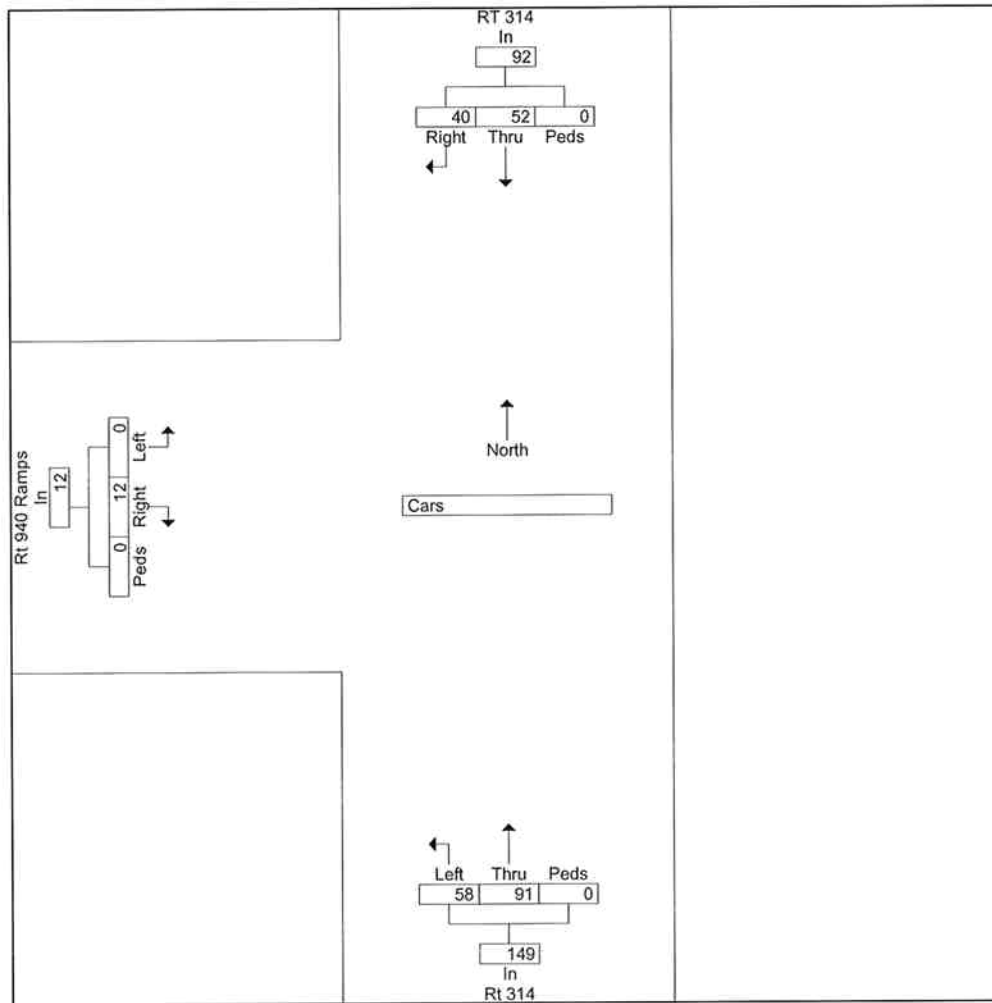


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 / Rt 940  
 Date: Friday: October 14, 2005  
 Counter: JI

File Name : 314&94~1  
 Site Code : 00000000  
 Start Date : 10/14/2005  
 Page No : 4

Start Time	RT 314 From North					Rt 314 From South					Rt 940/Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From	06:15 PM to 07:45 PM - Peak 1 of 1															
By Approach	06:15 PM					06:15 PM					07:00 PM					
Volume	40	52	0	0	92	0	91	58	0	149	12	0	0	0	12	
Percent	43.5	56.5	0.0	0.0		0.0	61.1	38.9	0.0		100.0	0.0	0.0	0.0		
High Int.	06:30 PM					06:30 PM					07:00 PM					
Volume	19	21	0	0	40	0	33	16	0	49	4	0	0	0	4	
Peak Factor	0.575					0.760					0.750					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 /Rt 940 WB Ramps  
 Date: Saturday: October 15, 2005  
 Counter: JI

File Name : BG1015-6  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 1

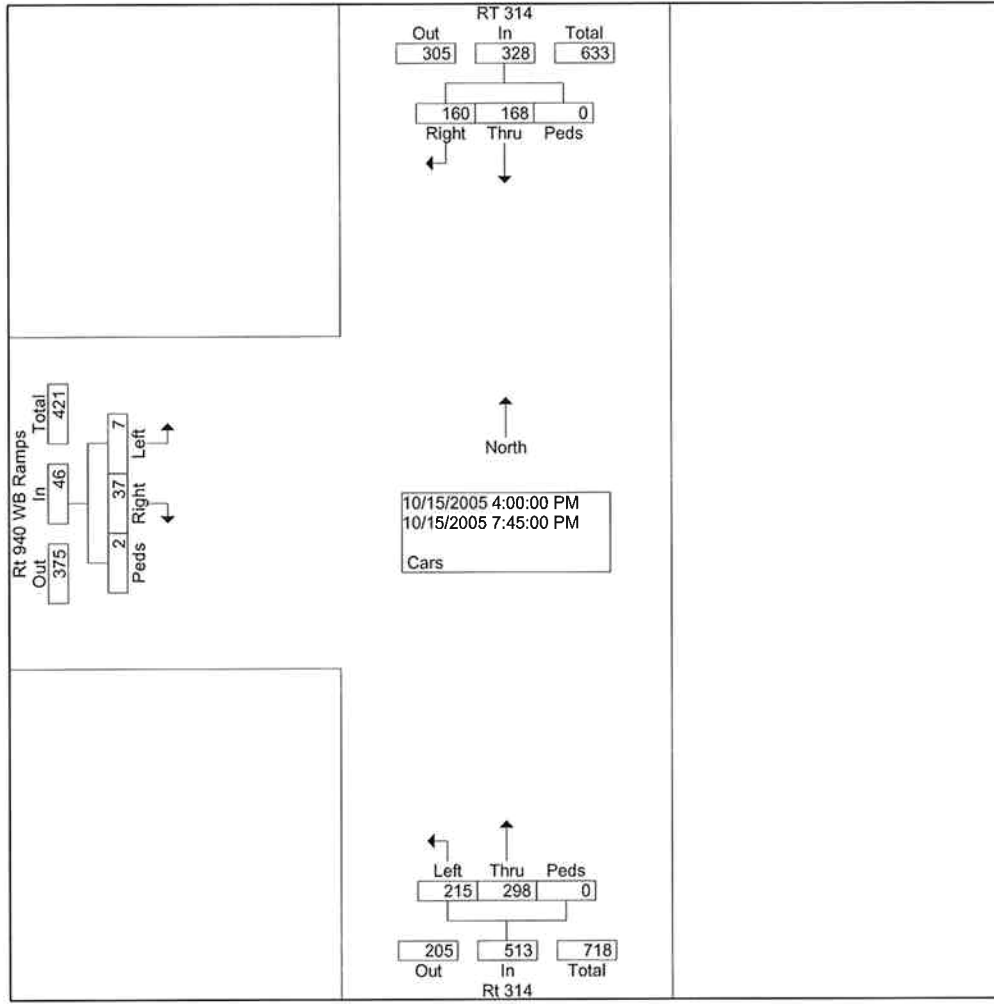
Groups Printed- Cars

Start Time	RT 314 From North					Rt 314 From South					Rt 940 WB Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	16	10	0	0	26	1	18	31	0	50	2	0	1	0	3	79
04:15 PM	11	10	0	0	21	0	25	17	0	42	1	0	1	0	2	65
04:30 PM	17	17	0	0	34	0	19	18	0	37	2	0	0	0	2	73
04:45 PM	8	14	0	0	22	0	20	15	0	35	8	0	0	0	8	65
Total	52	51	0	0	103	1	82	81	0	164	13	0	2	0	15	282
05:00 PM	10	12	0	0	22	0	28	16	0	44	4	0	0	1	5	71
05:15 PM	9	9	0	0	18	0	15	13	0	28	3	0	1	0	4	50
05:30 PM	9	5	0	0	14	0	23	13	0	36	1	0	3	0	4	54
05:45 PM	10	19	0	0	29	0	14	13	0	27	2	0	0	0	2	58
Total	38	45	0	0	83	0	80	55	0	135	10	0	4	1	15	233
06:00 PM	12	16	0	0	28	0	17	18	0	35	0	0	0	0	0	63
06:15 PM	3	13	0	0	16	0	19	9	0	28	2	0	0	0	2	46
06:30 PM	11	11	0	0	22	0	19	9	0	28	1	0	0	0	1	51
06:45 PM	14	8	0	0	22	0	26	11	0	37	4	0	0	0	4	63
Total	40	48	0	0	88	0	81	47	0	128	7	0	0	0	7	223
07:00 PM	4	6	0	0	10	0	17	6	0	23	4	0	0	0	4	37
07:15 PM	9	4	0	0	13	0	13	6	0	19	3	0	0	0	3	35
07:30 PM	10	8	0	0	18	0	12	8	0	20	0	0	1	0	1	39
07:45 PM	7	6	0	0	13	0	13	12	0	25	0	0	0	1	1	39
Total	30	24	0	0	54	0	55	32	0	87	7	0	1	1	9	150
Grand Total	160	168	0	0	328	1	298	215	0	514	37	0	7	2	46	888
Apprch %	48.8	51.2	0.0	0.0		0.2	58.0	41.8	0.0		80.4	0.0	15.2	4.3		
Total %	18.0	18.9	0.0	0.0	36.9	0.1	33.6	24.2	0.0	57.9	4.2	0.0	0.8	0.2	5.2	

Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 /Rt 940 WB Ramps  
 Date: Saturday: October 15, 2005  
 Counter: JI

File Name : BG1015-6  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 2

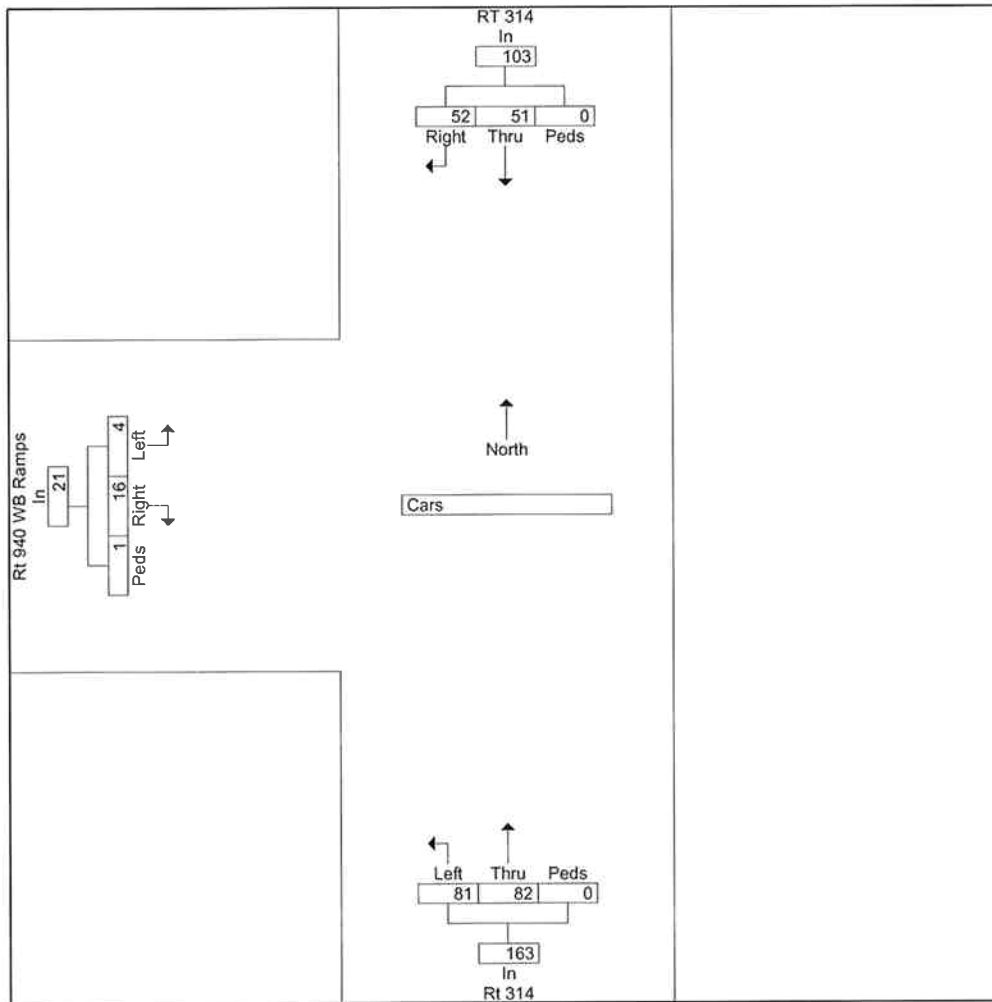


Tri-State Traffic Data, Inc.  
 184 Baker Road  
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Location: Monroe Co. Pa.  
 Intersection: Rt 314 /Rt 940 WB Ramps  
 Date: Saturday: October 15, 2005  
 Counter: JI

File Name : BG1015-6  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 3

Start Time	RT 314 From North					Rt 314 From South					Rt 940 WB Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach	04:00 PM					04:00 PM					04:45 PM					
Volume	52	51	0	0	103	1	82	81	0	164	16	0	4	1	21	
Percent	50.5	49.5	0.0	0.0		0.6	50.0	49.4	0.0		76.2	0.0	19.0	4.8		
High Int.	04:30 PM					04:00 PM					04:45 PM					
Volume	17	17	0	0	34	1	18	31	0	50	8	0	0	0	8	
Peak Factor	0.757					0.820					0.656					

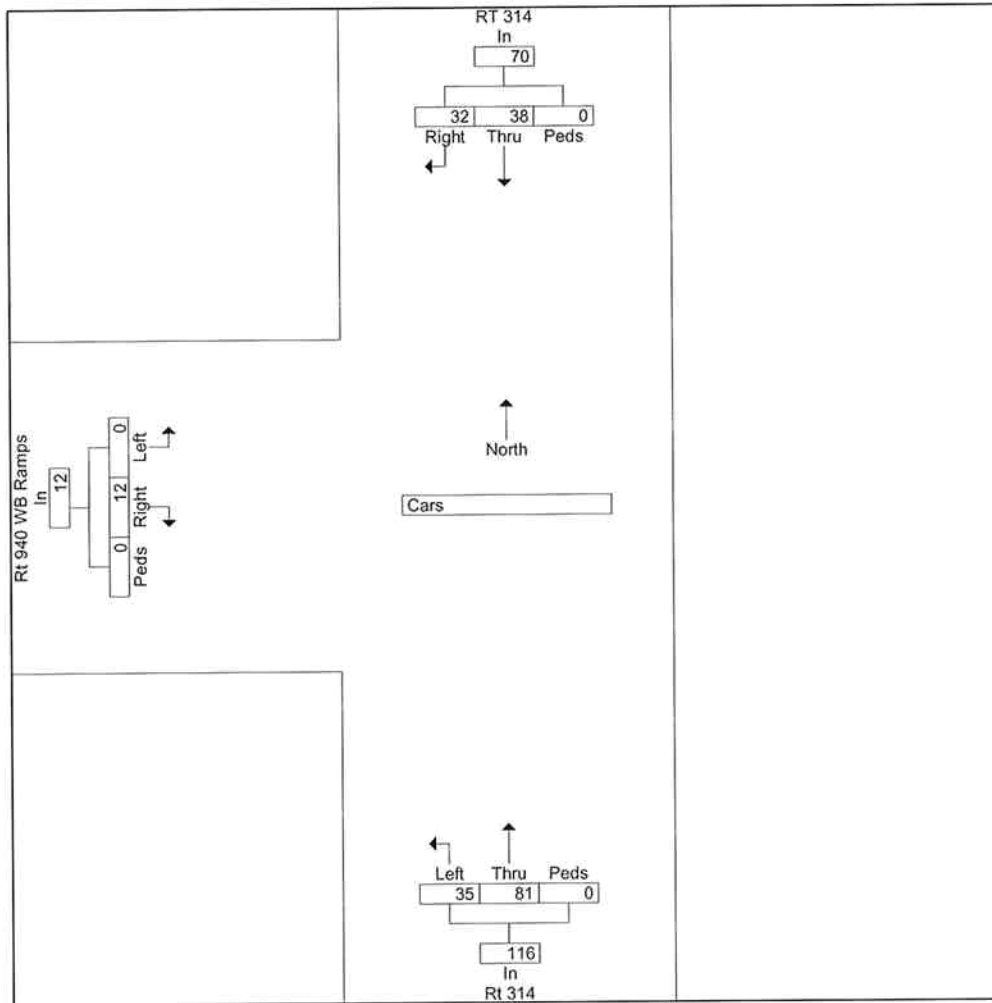


Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe Co. Pa.  
 Intersection: Rt 314 /Rt 940 WB Ramps  
 Date: Saturday: October 15, 2005  
 Counter: JI

File Name : BG1015-6  
 Site Code : 00000000  
 Start Date : 10/15/2005  
 Page No : 4

Start Time	RT 314 From North					Rt 314 From South					Rt 940 WB Ramps From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																
By Approach 06:15 PM																
Volume	32	38	0	0	70	0	81	35	0	116	12	0	0	0	12	
Percent	45.7	54.3	0.0	0.0		0.0	69.8	30.2	0.0		100.0	0.0	0.0	0.0		
High Int. 06:30 PM																
Volume	11	11	0	0	22	0	26	11	0	37	4	0	0	0	4	
Peak Factor	0.795					0.784					0.750					





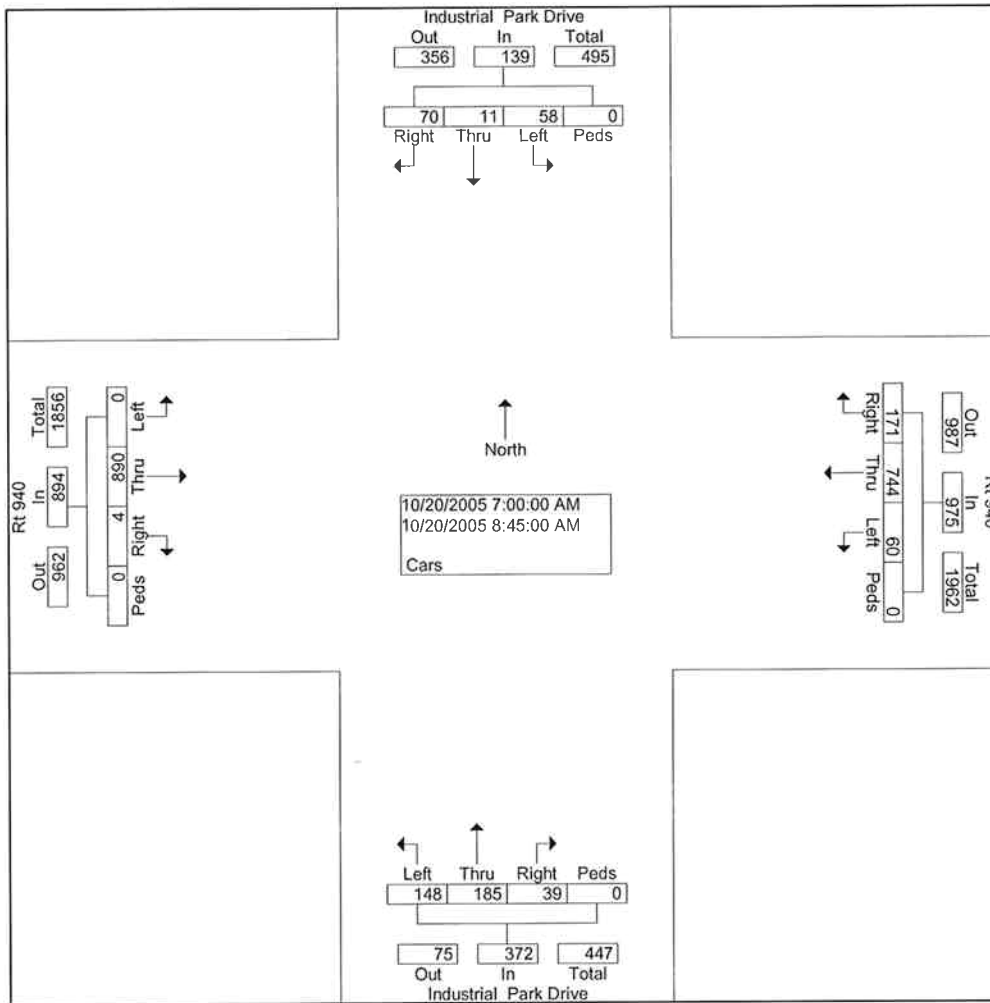
Location: Monroe County < PA  
 Intersection: Rt 940 / Industrial Pk Dr  
 Date: Thursday, October 20, 2005  
 Counter: cmk

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

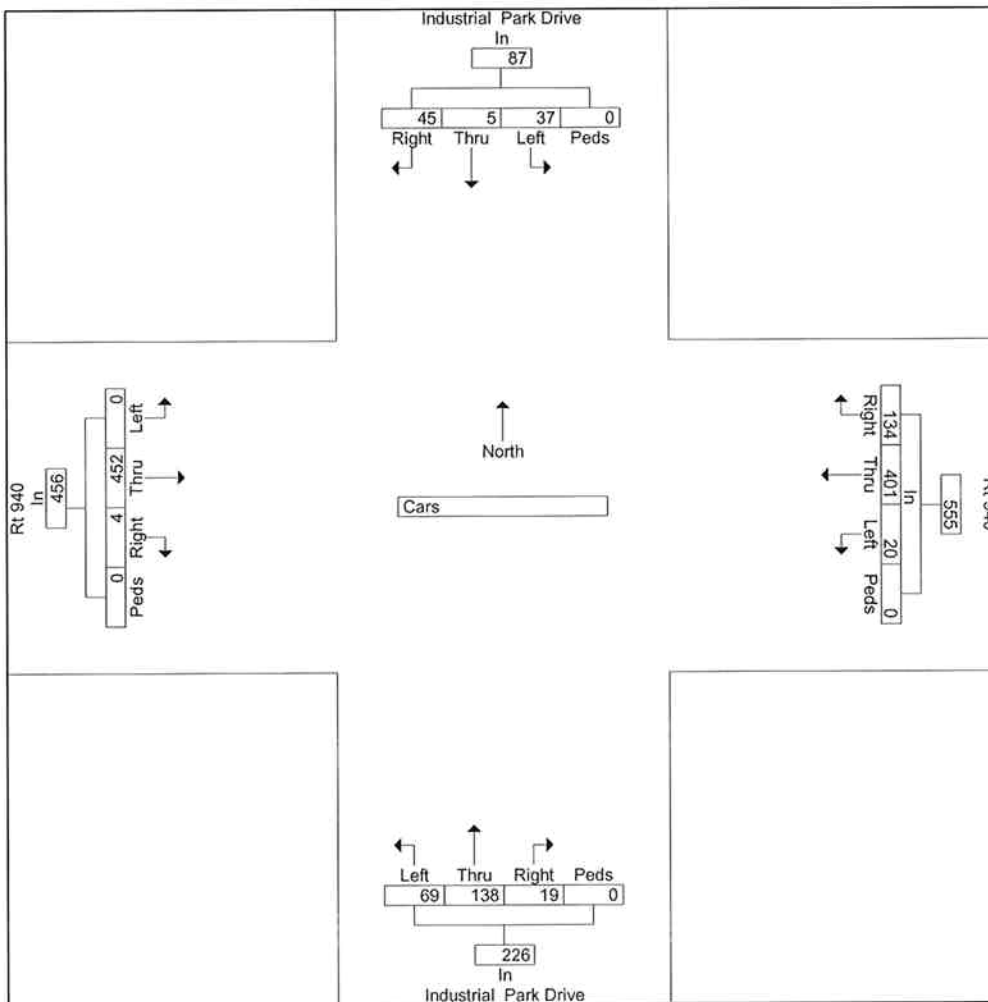
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Industrial Park Drive From North					Rt 940 From East					Industrial Park Drive From South					Rt 940 From West					Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
7:00 AM	13	2	11	0	26	18	84	1	0	103	2	20	12	0	34	0	110	0	0	110	2
7:15 AM	9	1	4	0	14	16	111	5	0	132	8	31	16	0	55	0	120	0	0	120	3
7:30 AM	12	2	15	0	29	44	106	4	0	154	5	46	22	0	73	0	109	0	0	109	3
7:45 AM	11	0	7	0	18	56	100	10	0	166	4	41	19	0	64	0	112	0	0	112	3
Total	45	5	37	0	87	134	401	20	0	555	19	138	69	0	226	0	451	0	0	451	13
8:00 AM	5	1	6	0	12	7	84	7	0	98	6	10	8	0	24	1	101	0	0	102	2
8:15 AM	3	3	2	0	8	12	71	6	0	89	9	11	14	0	34	1	108	0	0	109	2
8:30 AM	11	0	10	0	21	12	95	7	0	114	5	14	25	0	44	2	131	0	0	133	3
8:45 AM	6	2	3	0	11	6	93	20	0	119	0	12	32	0	44	0	99	0	0	99	2
Total	25	6	21	0	52	37	343	40	0	420	20	47	79	0	146	4	439	0	0	443	10
Grand Total	70	11	58	0	139	171	744	60	0	975	39	185	148	0	372	4	890	0	0	894	23
pprch %	50.4	7.9	41.7	0.0		17.5	76.3	6.2	0.0		10.5	49.7	39.8	0.0		0.4	99.6	0.0	0.0		
Total %	2.9	0.5	2.4	0.0	5.8	7.2	31.3	2.5	0.0	41.0	1.6	7.8	6.2	0.0	15.6	0.2	37.4	0.0	0.0	37.6	



Start Time	Industrial Park Drive From North					Rt 940 From East					Industrial Park Drive From South					Rt 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:00 AM					07:00 AM					07:00 AM					07:45 AM					
Volume	45	5	37	0	87	134	401	20	0	555	19	138	69	0	226	4	452	0	0	456	
Percent	51.7	5.7	42.5	0.0		24.1	72.3	3.6	0.0		8.4	61.1	30.5	0.0		0.9	99.1	0.0	0.0		
High Int.	07:30 AM					07:45 AM					07:30 AM					08:30 AM					
Volume	12	2	15	0	29	56	100	10	0	166	5	46	22	0	73	2	131	0	0	133	
Peak Factor	0.750					0.836					0.774					0.857					



Tri-State Traffic Data, Inc.  
184 Baker Road

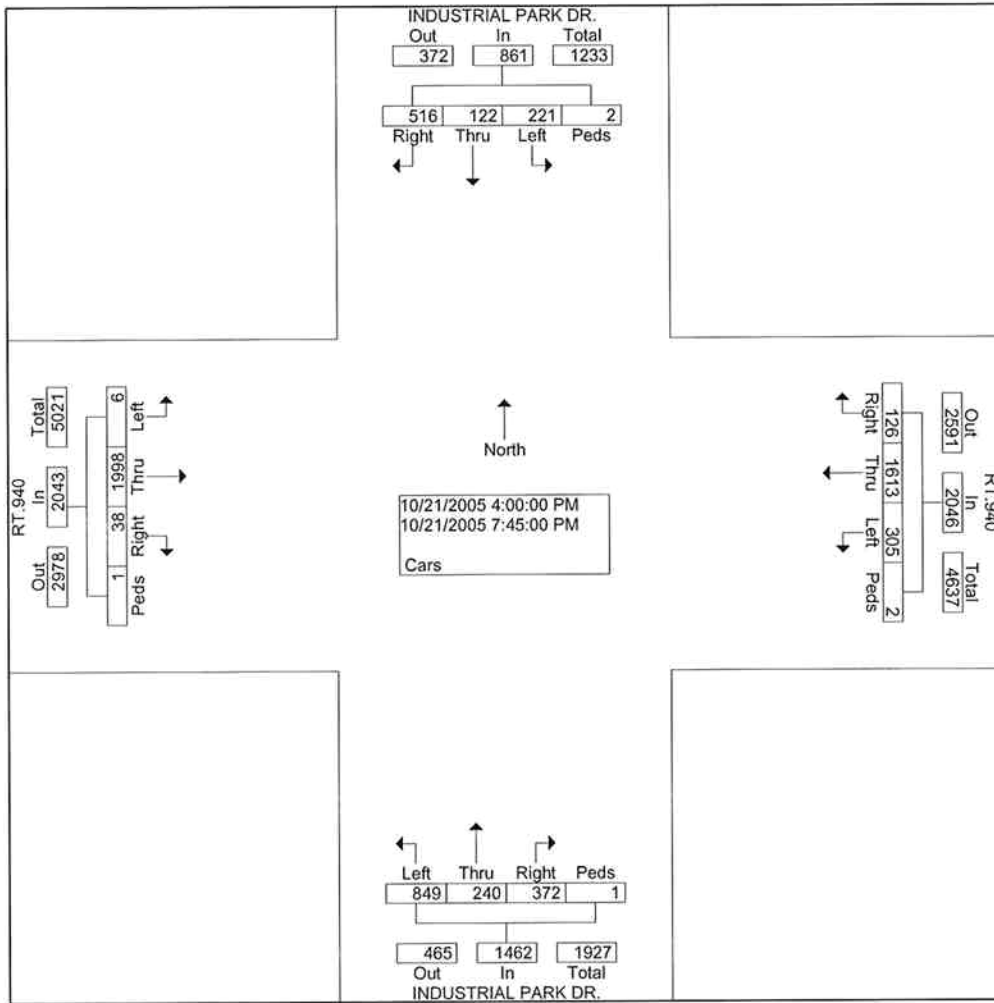
Location: Monroe County, PA  
Intersection: Rt.940/Industrial Park Dr.  
Date: Friday, October 21, 2005  
Counter: CMK

Coatsville, PA 19320  
(610) 466-1469

File Name : BG1021-7  
Site Code : 00000000  
Start Date : 10/21/2005  
Page No : 1

Groups Printed- Cars

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	93	10	14	0	117	4	27	11	1	43	12	32	89	0	133	7	137	2	0	146	439
04:15 PM	98	15	13	0	126	1	21	6	0	28	17	40	79	0	136	1	116	0	0	117	407
04:30 PM	88	25	55	0	168	24	126	17	0	167	14	33	75	0	122	3	138	2	0	143	600
04:45 PM	43	10	23	1	77	27	138	23	0	188	19	20	59	0	98	0	154	0	0	154	517
Total	322	60	105	1	488	56	312	57	1	426	62	125	302	0	489	11	545	4	0	560	1963
05:00 PM	24	4	16	1	45	10	124	18	0	152	39	9	64	1	113	2	138	0	0	140	450
05:15 PM	26	5	12	0	43	3	125	22	0	150	31	14	63	0	108	4	156	0	0	160	461
05:30 PM	22	4	11	0	37	4	146	26	1	177	24	9	53	0	86	2	161	0	0	163	463
05:45 PM	14	7	12	0	33	12	126	17	0	155	35	4	60	0	99	1	135	1	1	138	425
Total	86	20	51	1	158	29	521	83	1	634	129	36	240	1	406	9	590	1	1	601	1799
06:00 PM	13	3	8	0	24	3	110	26	0	139	27	6	51	0	84	3	136	0	0	139	386
06:15 PM	10	4	5	0	19	2	105	22	0	129	21	8	44	0	73	3	126	0	0	129	350
06:30 PM	17	7	5	0	29	4	84	25	0	113	30	5	31	0	66	2	102	0	0	104	312
06:45 PM	10	4	6	0	20	19	100	16	0	135	20	11	42	0	73	3	141	1	0	145	373
Total	50	18	24	0	92	28	399	89	0	516	98	30	168	0	296	11	505	1	0	517	1421
07:00 PM	15	7	20	0	42	5	96	20	0	121	20	15	33	0	68	1	96	0	0	97	328
07:15 PM	16	1	8	0	25	3	81	18	0	102	18	8	33	0	59	1	100	0	0	101	287
07:30 PM	21	5	9	0	35	2	110	20	0	132	19	5	41	0	65	3	84	0	0	87	319
07:45 PM	6	11	4	0	21	3	94	18	0	115	26	21	32	0	79	2	78	0	0	80	295
Total	58	24	41	0	123	13	381	76	0	470	83	49	139	0	271	7	358	0	0	365	1229
Grand Total	516	122	221	2	861	126	1613	305	2	2046	372	240	849	1	1462	38	1998	6	1	2043	6412
Apprch %	59.9	14.2	25.7	0.2		6.2	78.8	14.9	0.1		25.4	16.4	58.1	0.1		1.9	97.8	0.3	0.0		
Total %	8.0	1.9	3.4	0.0	13.4	2.0	25.2	4.8	0.0	31.9	5.8	3.7	13.2	0.0	22.8	0.6	31.2	0.1	0.0	31.9	



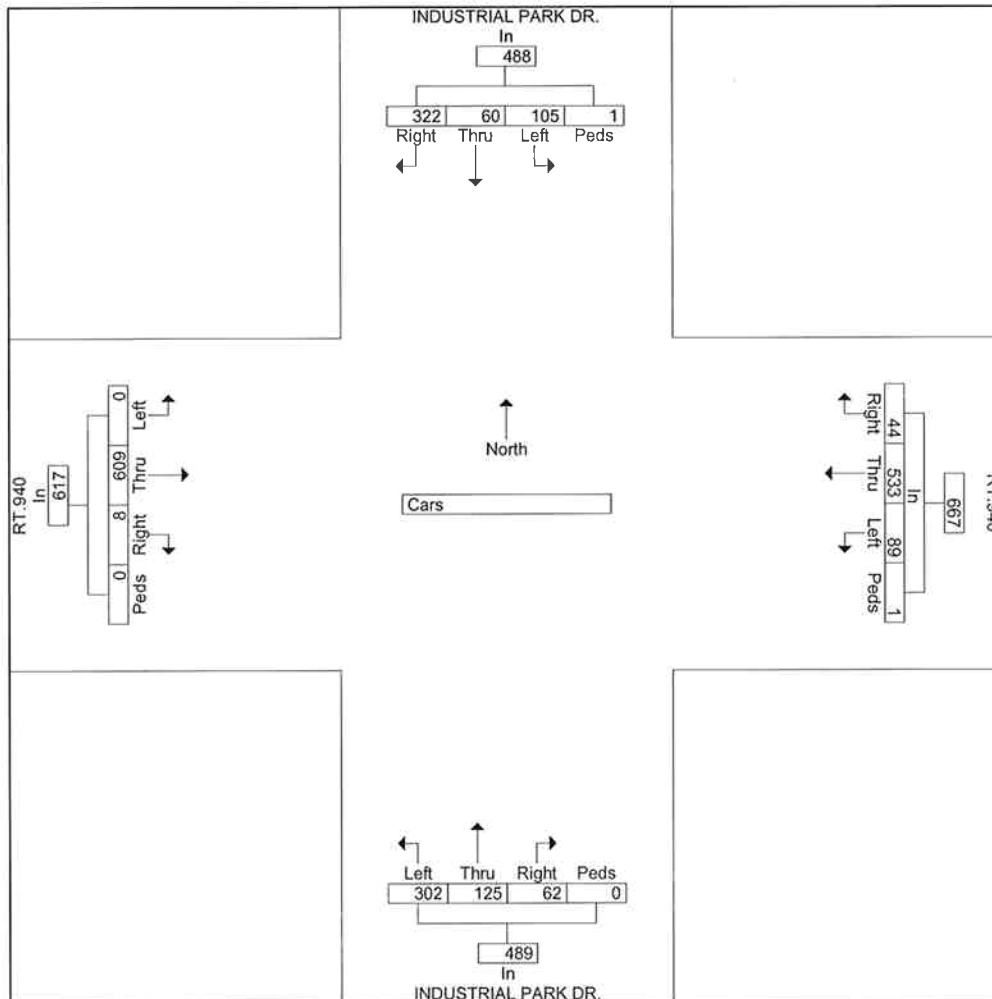
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021-7  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	

Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1

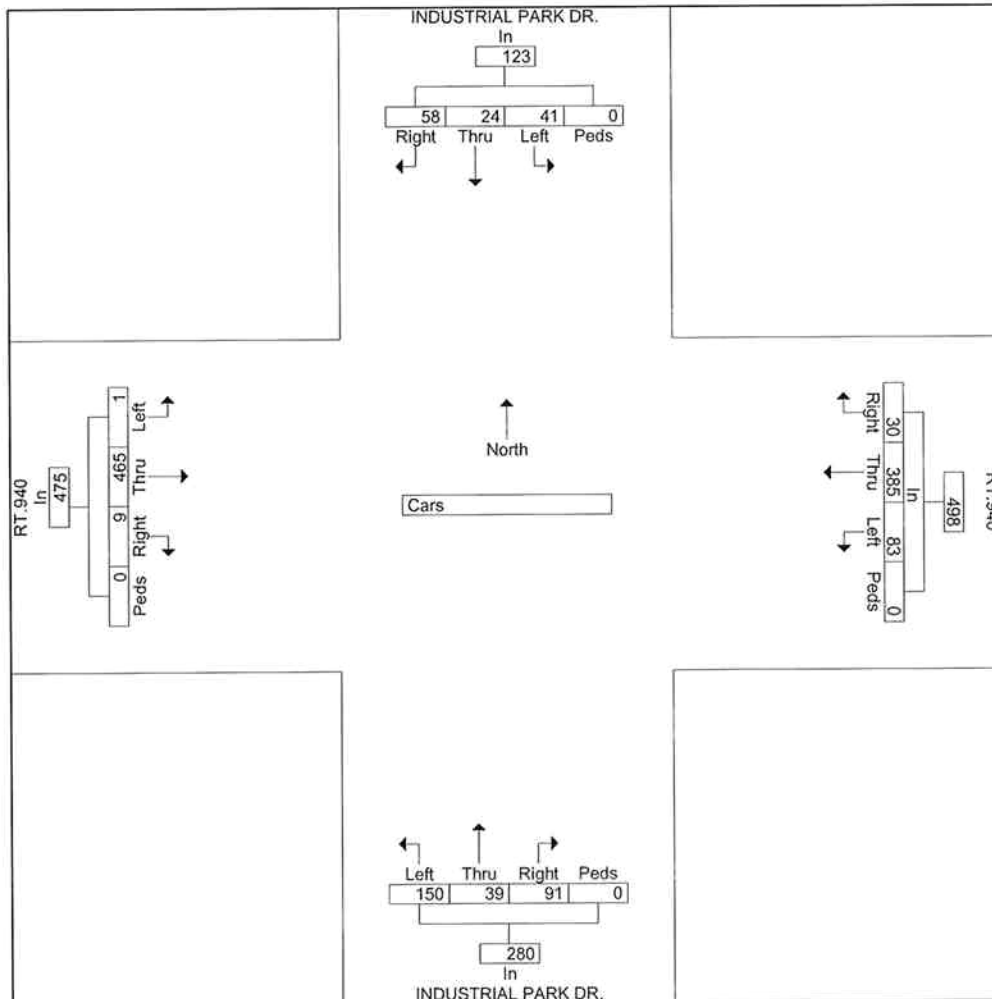
By Approach	04:00 PM					04:45 PM					04:00 PM					04:45 PM				
Volume	322	60	105	1	488	44	533	89	1	667	62	125	302	0	489	8	609	0	0	617
Percent	66.0	12.3	21.5	0.2		6.6	79.9	13.3	0.1		12.7	25.6	61.8	0.0		1.3	98.7	0.0	0.0	
High Int. Peak Factor	04:30 PM					04:45 PM					04:15 PM					05:30 PM				
Volume	88	25	55	0	168	27	138	23	0	188	17	40	79	0	136	2	161	0	0	163
	0.72					0.88					0.89					0.94				
	6					7					9					6				



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021-7  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	07:00 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	58	24	41	0	123	30	385	83	0	498	91	39	150	0	280	9	465	1	0	475	
Percent	47.	19.	33.	0.0		6.0	77.	16.	0.0		32.	13.	53.	0.0		1.9	97.	0.2	0.0		
	2	5	3			3	7				5	9	6			9	9				
High Int. Volume	07:00 PM					06:45 PM					06:15 PM					06:45 PM					
Peak Factor	15	7	20	0	42	19	100	16	0	135	21	8	44	0	73	3	141	1	0	145	
					0.73					0.92					0.95					0.81	
					2					2					9					9	



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt.940/IndustrialParkDr

Date: Saturday, October 22, 2005

Counter: CMK

File Name : BG1022-7

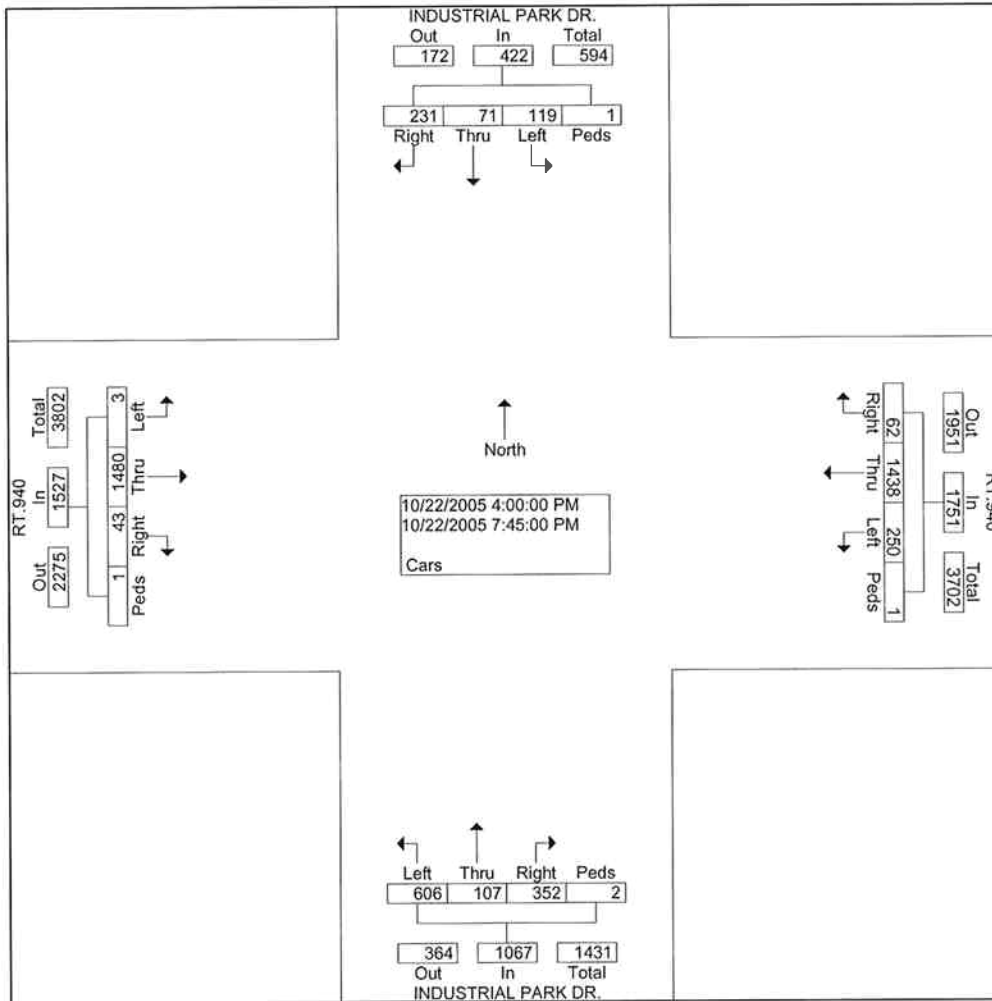
Site Code : 00000000

Start Date : 10/22/2005

Page No : 1

Groups Printed- Cars

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	20	5	12	0	37	6	85	24	0	115	28	10	45	0	83	5	103	1	0	109	344
04:15 PM	20	3	8	0	31	8	132	25	1	166	29	9	46	0	84	1	91	0	0	92	373
04:30 PM	40	11	46	0	97	2	111	14	0	127	22	7	34	1	64	4	102	0	0	106	394
04:45 PM	19	3	7	0	29	8	107	17	0	132	28	4	45	0	77	3	100	0	0	103	341
Total	99	22	73	0	194	24	435	80	1	540	107	30	170	1	308	13	396	1	0	410	1452
05:00 PM	15	4	3	0	22	2	124	19	0	145	23	8	46	1	78	2	97	0	1	100	345
05:15 PM	11	5	2	0	18	4	76	26	0	106	23	8	35	0	66	3	113	0	0	116	306
05:30 PM	9	9	4	0	22	1	100	9	0	110	29	6	35	0	70	4	104	0	0	108	310
05:45 PM	12	4	4	0	20	0	96	13	0	109	18	4	39	0	61	0	93	0	0	93	283
Total	47	22	13	0	82	7	396	67	0	470	93	26	155	1	275	9	407	0	1	417	1244
06:00 PM	11	3	0	0	14	3	91	15	0	109	29	7	34	0	70	4	110	0	0	114	307
06:15 PM	10	2	2	0	14	1	68	12	0	81	25	6	37	0	68	0	95	0	0	95	258
06:30 PM	5	6	4	0	15	7	96	13	0	116	15	10	37	0	62	6	69	0	0	75	268
06:45 PM	13	1	4	0	18	5	69	18	0	92	28	12	32	0	72	2	78	0	0	80	262
Total	39	12	10	0	61	16	324	58	0	398	97	35	140	0	272	12	352	0	0	364	1095
07:00 PM	16	9	12	0	37	7	75	10	0	92	13	7	40	0	60	3	108	0	0	111	300
07:15 PM	3	1	7	0	11	3	80	15	0	98	14	3	38	0	55	1	76	1	0	78	242
07:30 PM	10	2	3	0	15	3	54	11	0	68	19	2	30	0	51	1	81	0	0	82	216
07:45 PM	17	3	1	1	22	2	74	9	0	85	9	4	33	0	46	4	60	1	0	65	218
Total	46	15	23	1	85	15	283	45	0	343	55	16	141	0	212	9	325	2	0	336	976
Grand Total	231	71	119	1	422	62	1438	250	1	1751	352	107	606	2	1067	43	1480	3	1	1527	4767
Apprch %	54.7	16.8	28.2	0.2		3.5	82.1	14.3	0.1		33.0	10.0	56.8	0.2		2.8	96.9	0.2	0.1		
Total %	4.8	1.5	2.5	0.0	8.9	1.3	30.2	5.2	0.0	36.7	7.4	2.2	12.7	0.0	22.4	0.9	31.0	0.1	0.0	32.0	





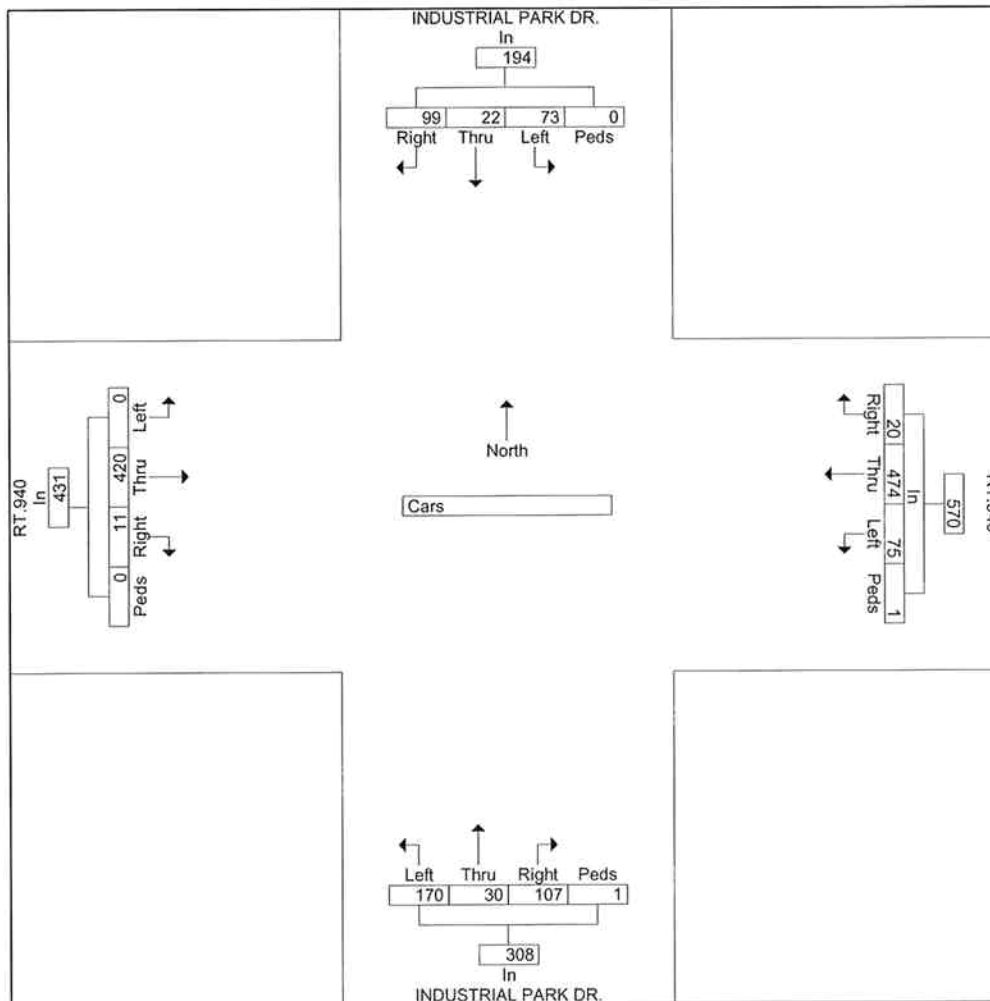
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022-7  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	

Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1

By Approach	04:00 PM					04:15 PM					04:00 PM					05:15 PM				
Volume	99	22	73	0	194	20	474	75	1	570	107	30	170	1	308	11	420	0	0	431
Percent	51.	11.	37.	0.0		3.5	83.	13.	0.2		34.	9.7	55.	0.3		2.6	97.	0.0	0.0	
	0	3	6			2	2				7	2				4				
High Int. Peak Factor	04:30 PM					04:15 PM					04:15 PM					05:15 PM				
Volume	40	11	46	0	97	8	132	25	1	166	29	9	46	0	84	3	113	0	0	116
					0.50					0.85					0.91					0.92
					0					8					7					9



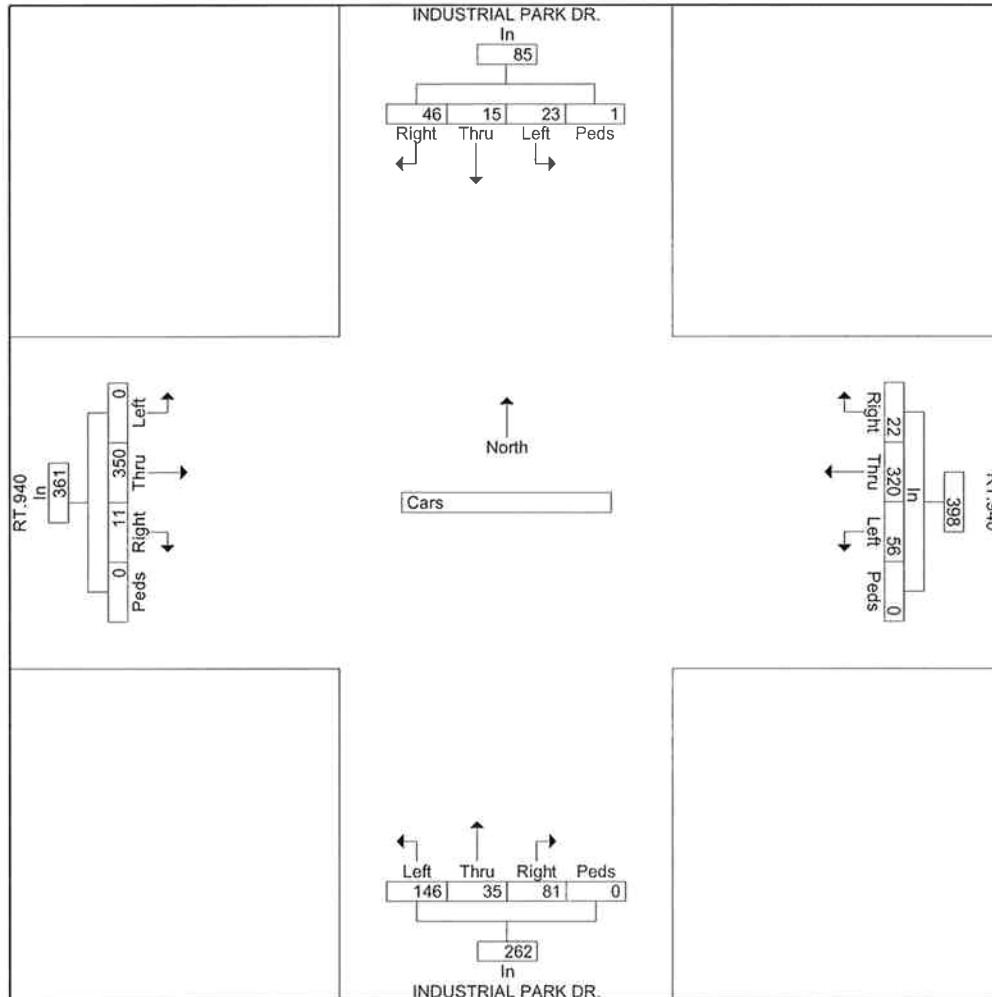
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022-7  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	INDUSTRIAL PARK DR. From North					RT.940 From East					INDUSTRIAL PARK DR. From South					RT.940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	

Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1

By Approach	07:00 PM	06:30 PM	06:15 PM	06:15 PM
Volume	46 15 23 1 85	22 320 56 0 398	81 35 146 0 262	11 350 0 0 361
Percent	54. 17. 27. 1.2	5.5 80. 14. 0.0	30. 13. 55. 0.0	3.0 97. 0 0.0
High Int. Peak Factor	07:00 PM 16 9 12 0 37 0.57 4	06:30 PM 7 96 13 0 116 0.85 8	06:45 PM 28 12 32 0 72 0.91 0	07:00 PM 3 108 0 0 111 0.81 3



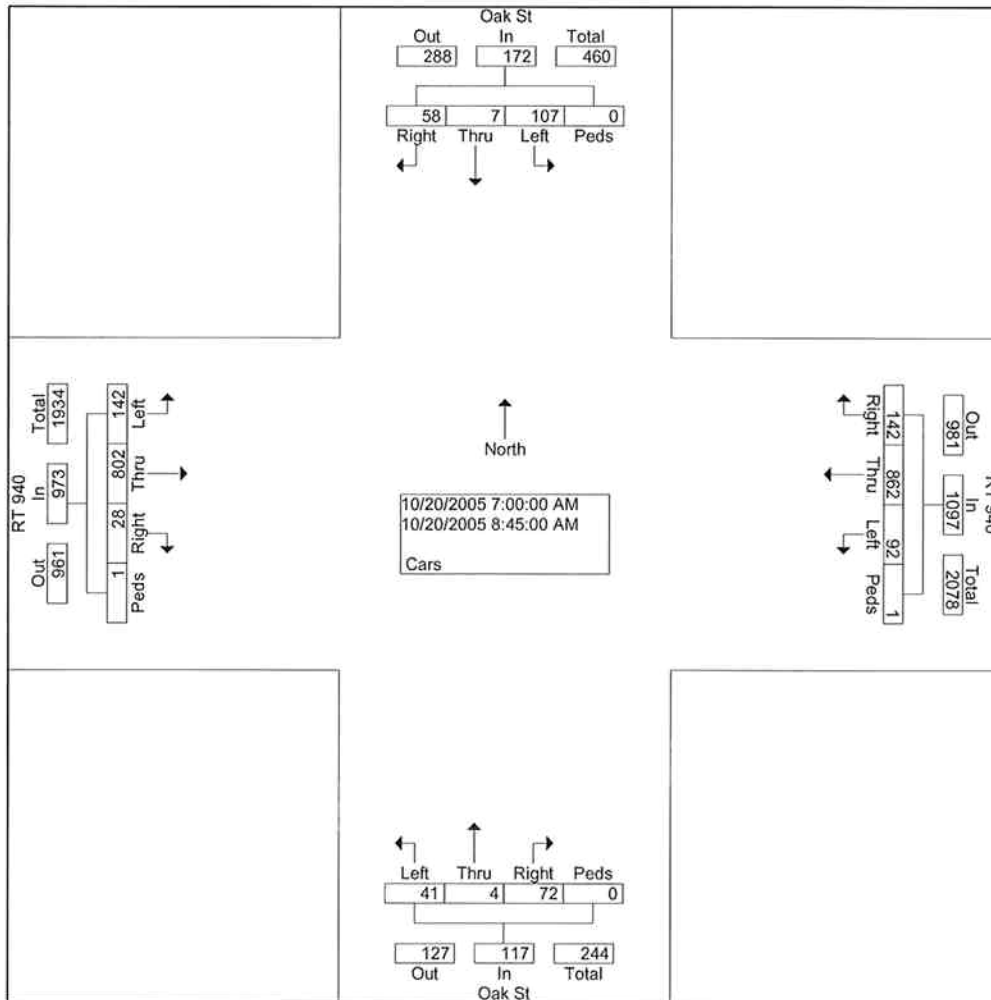
Location: Monroe County, PA  
 Intersection: Oak St /Rt 940  
 Date: Thursday, October 20 2005  
 Counter: RZ

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

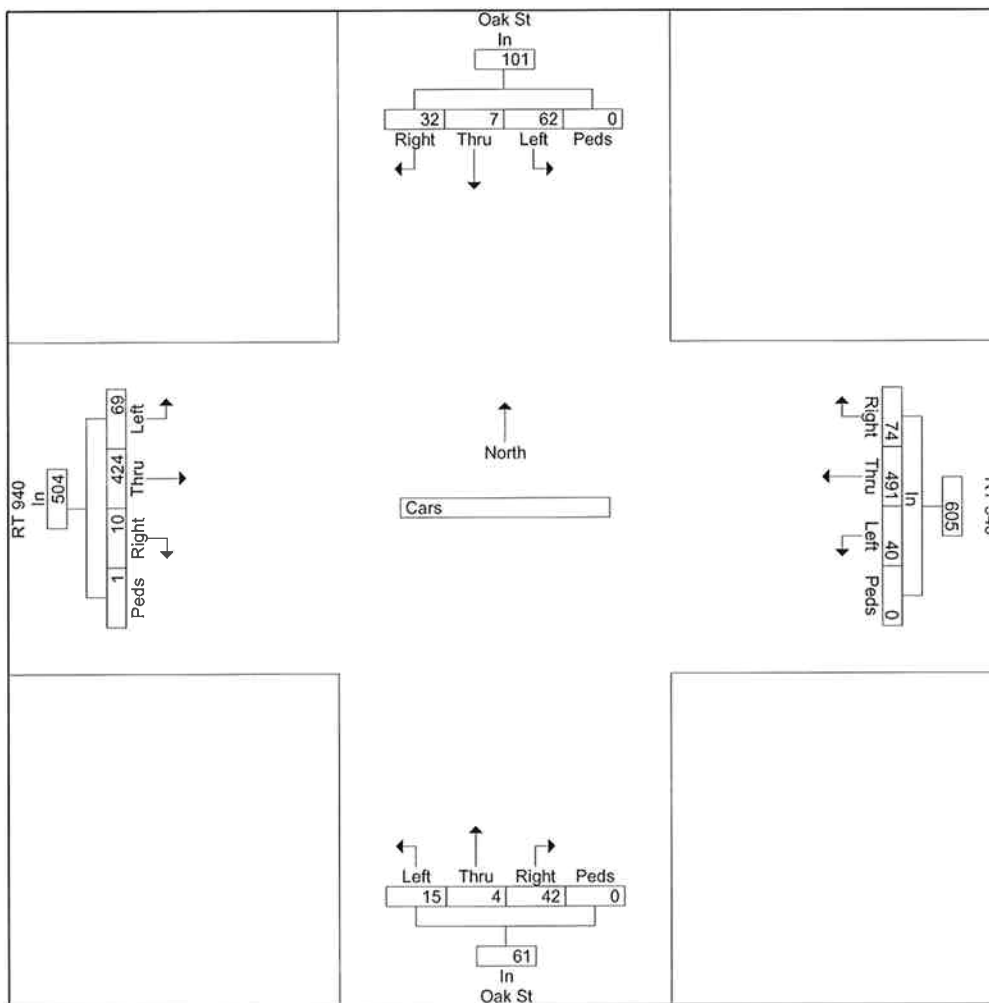
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Total				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total					
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
7:00 AM	4	0	12	0	16	13	97	6	0	116	9	0	3	0	12	0	108	16	1	125	2				
7:15 AM	5	0	10	0	15	20	125	8	0	153	6	0	7	0	13	5	93	16	0	114	2				
7:30 AM	9	0	13	0	22	19	135	8	0	162	8	0	5	0	13	3	114	20	0	137	3				
7:45 AM	8	0	10	0	18	15	143	14	0	172	7	0	11	0	18	2	109	17	0	128	3				
Total	26	0	45	0	71	67	500	36	0	603	30	0	26	0	56	10	424	69	1	504	12				
8:00 AM	2	0	14	0	16	20	88	10	0	118	8	0	7	0	15	5	93	12	0	110	2				
8:15 AM	4	0	18	0	22	16	86	9	0	111	7	0	1	0	8	6	92	18	0	116	2				
8:30 AM	14	0	15	0	29	16	94	13	1	124	15	0	3	0	18	2	110	26	0	138	3				
8:45 AM	12	7	15	0	34	23	94	24	0	141	12	4	4	0	20	5	83	17	0	105	3				
Total	32	7	62	0	101	75	362	56	1	494	42	4	15	0	61	18	378	73	0	469	11				
Grand Total	58	7	107	0	172	142	862	92	1	1097	72	4	41	0	117	28	802	142	1	973	23				
pprch %	33.7	4.1	62.2	0.0		12.9	78.6	8.4	0.1		61.5	3.4	35.0	0.0		2.9	82.4	14.6	0.1						
Total %	2.5	0.3	4.5	0.0	7.3	6.0	36.5	3.9	0.0	46.5	3.1	0.2	1.7	0.0	5.0	1.2	34.0	6.0	0.0	41.2					



Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	08:00 AM					07:15 AM					08:00 AM					07:00 AM					
Volume	32	7	62	0	101	74	491	40	0	605	42	4	15	0	61	10	424	69	1	504	
Percent	31.7	6.9	61.4	0.0		12.2	81.2	6.6	0.0		68.9	6.6	24.6	0.0		2.0	84.1	13.7	0.2		
High Int.	08:45 AM					07:45 AM					08:45 AM					07:30 AM					
Volume	12	7	15	0	34	15	143	14	0	172	12	4	4	0	20	3	114	20	0	137	
Peak Factor	0.743					0.879					0.763					0.920					



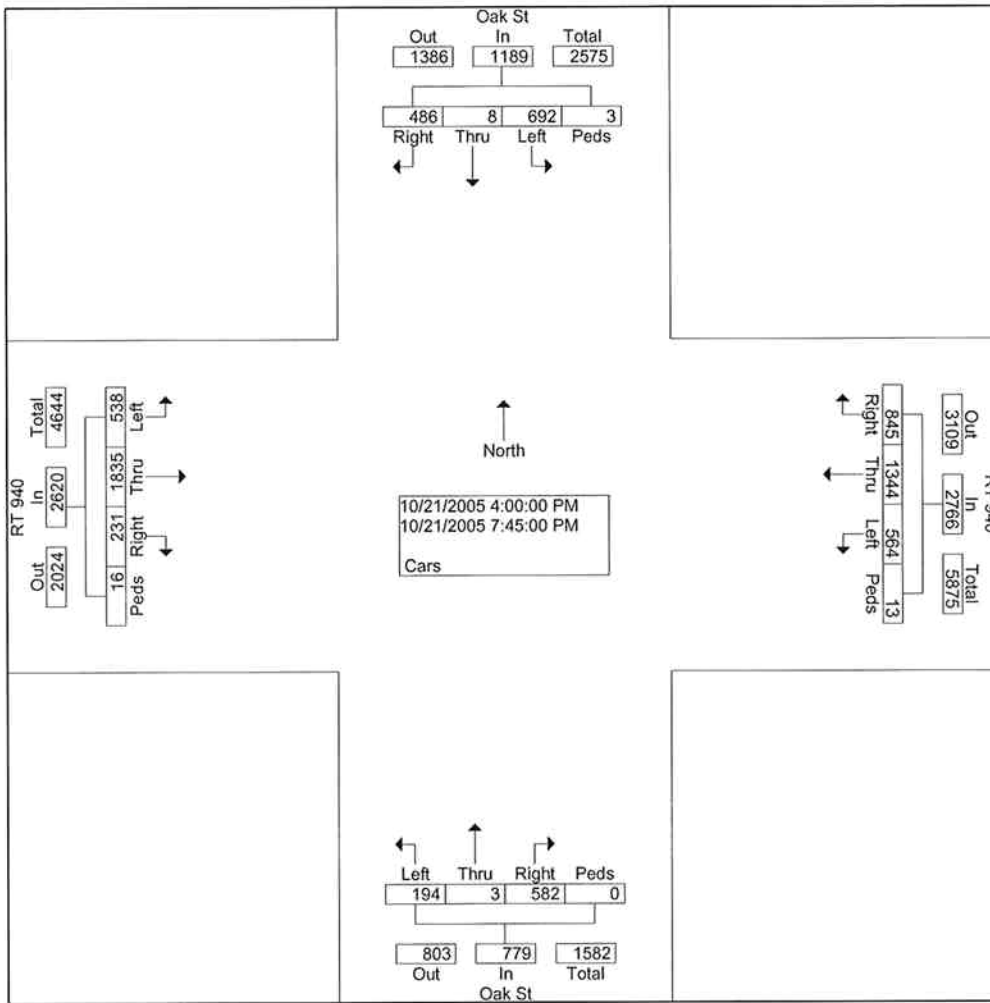
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, Pa  
 Intersection: Oak St / Rt 940  
 Date: Friday, October 21, 2005  
 Counter: RZ

File Name : BG1021-8  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 1

Groups Printed- Cars

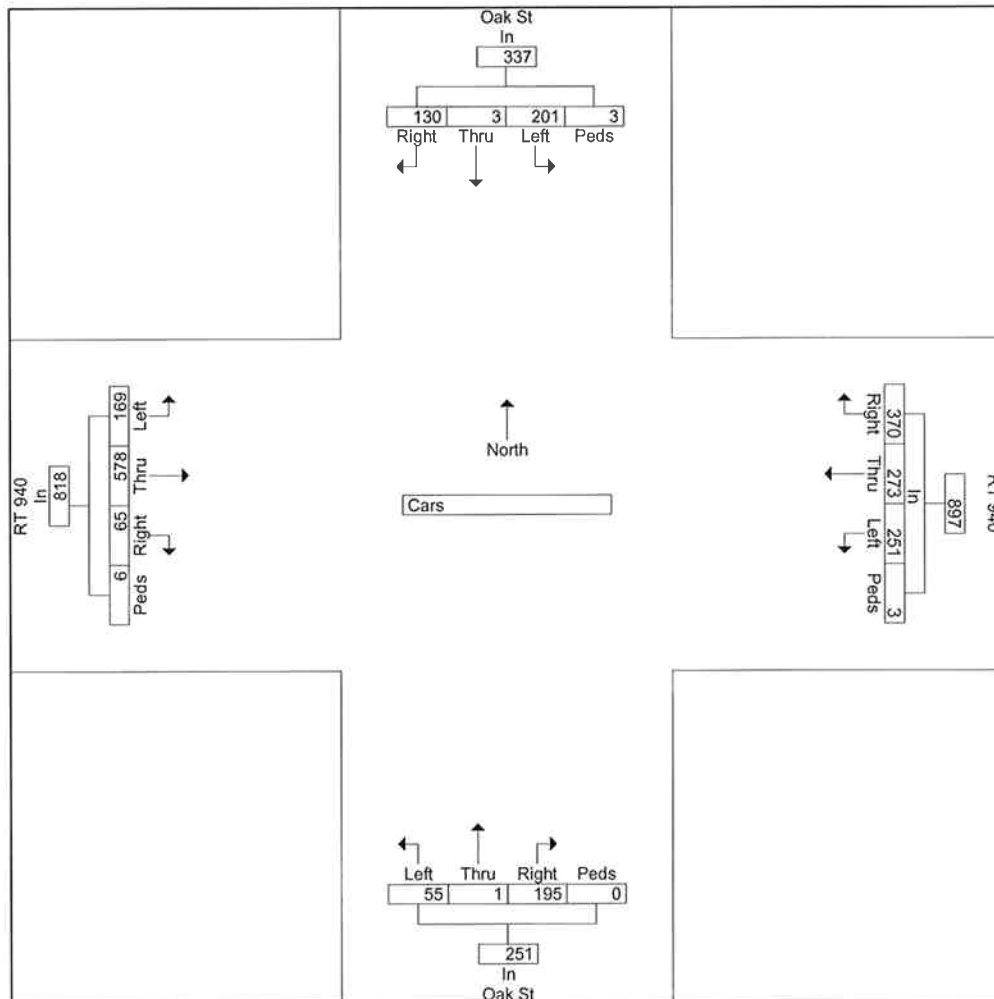
Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	39	0	41	0	80	131	1	88	0	220	47	0	3	0	50	21	117	9	0	147	497
04:15 PM	30	0	45	0	75	139	0	100	1	240	63	1	1	0	65	10	126	11	0	147	527
04:30 PM	28	0	60	0	88	54	141	28	0	223	46	0	19	0	65	26	155	45	3	229	605
04:45 PM	36	1	44	1	82	46	131	35	2	214	46	0	20	0	66	21	133	36	1	191	553
Total	133	1	190	1	325	370	273	251	3	897	202	1	43	0	246	78	531	101	4	714	2182
05:00 PM	38	1	42	1	82	34	110	41	1	186	40	0	15	0	55	11	157	46	1	215	538
05:15 PM	28	1	55	1	85	35	100	34	3	172	28	0	15	0	43	7	133	42	1	183	483
05:30 PM	45	1	41	0	87	36	104	26	3	169	37	0	21	0	58	17	125	46	0	188	502
05:45 PM	27	0	35	0	62	50	103	35	0	188	50	1	22	0	73	11	130	31	0	172	495
Total	138	3	173	2	316	155	417	136	7	715	155	1	73	0	229	46	545	165	2	758	2018
06:00 PM	27	0	54	0	81	42	103	20	0	165	35	0	11	0	46	18	104	47	0	169	461
06:15 PM	29	1	31	0	61	43	90	22	0	155	41	1	8	0	50	7	119	36	1	163	429
06:30 PM	32	0	44	0	76	36	71	29	0	136	30	0	6	0	36	17	92	45	2	156	404
06:45 PM	23	2	43	0	68	47	101	21	1	170	31	0	10	0	41	16	121	36	0	173	452
Total	111	3	172	0	286	168	365	92	1	626	137	1	35	0	173	58	436	164	3	661	1746
07:00 PM	21	0	32	0	53	43	79	26	2	150	25	0	12	0	37	15	102	28	0	145	385
07:15 PM	31	1	43	0	75	31	62	20	0	113	17	0	3	0	20	8	83	30	5	126	334
07:30 PM	30	0	49	0	79	35	86	21	0	142	29	0	13	0	42	14	67	29	2	112	375
07:45 PM	22	0	33	0	55	43	62	18	0	123	17	0	15	0	32	12	71	21	0	104	314
Total	104	1	157	0	262	152	289	85	2	528	88	0	43	0	131	49	323	108	7	487	1408
Grand Total	486	8	692	3	1189	845	1344	564	13	2766	582	3	194	0	779	231	1835	538	16	2620	7354
Apprch %	40.9	0.7	58.2	0.3		30.5	48.6	20.4	0.5		74.7	0.4	24.9	0.0		8.8	70.0	20.5	0.6		
Total %	6.6	0.1	9.4	0.0	16.2	11.5	18.3	7.7	0.2	37.6	7.9	0.0	2.6	0.0	10.6	3.1	25.0	7.3	0.2	35.6	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021-8  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

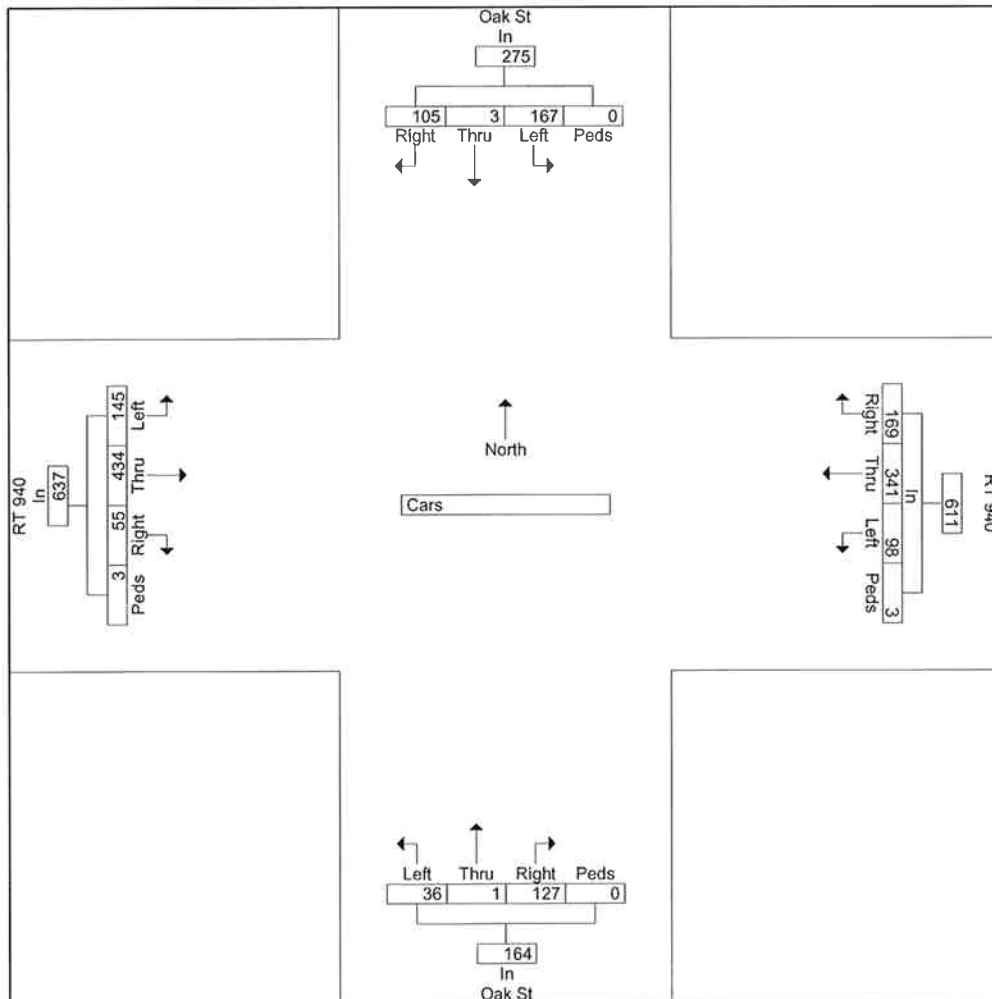
Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:30 PM					04:00 PM					04:15 PM					04:30 PM					
Volume	130	3	201	3	337	370	273	251	3	897	195	1	55	0	251	65	578	169	6	818	
Percent	38.6	0.9	59.6	0.9		41.2	30.4	28.0	0.3		77.7	0.4	21.9	0.0		7.9	70.7	20.7	0.7		
High Int. Peak Factor	04:30 PM					04:15 PM					04:45 PM					04:30 PM					
Volume	28	0	60	0	88	139	0	100	1	240	46	0	20	0	66	26	155	45	3	229	
Peak Factor	0.957					0.934					0.951					0.893					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021-8  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:45 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	105	3	167	0	275	169	341	98	3	611	127	1	36	0	164	55	434	145	3	637	
Percent	38.2	1.1	60.7	0.0		27.7	55.8	16.0	0.5		77.4	0.6	22.0	0.0		8.6	68.1	22.8	0.5		
High Int. Peak Factor	07:30 PM					06:45 PM					06:15 PM					06:45 PM					
Volume	30	0	49	0	79	47	101	21	1	170	41	1	8	0	50	16	121	36	0	173	
	0.87					0.89					0.82					0.92					
	0					9					0					1					





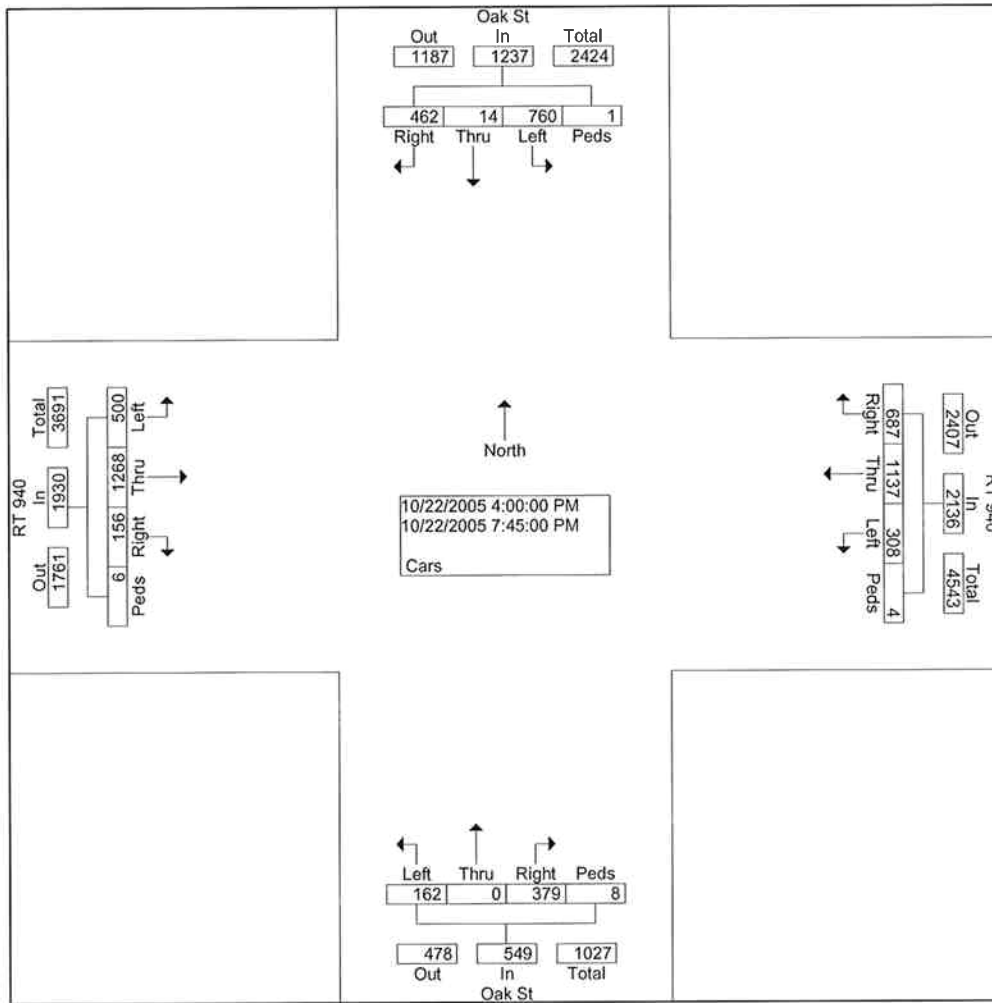
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Oak St / Rt 940  
 Date: Saturday, October 22 2005  
 Counter: RZ

File Name : BG1022-8  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 1

Groups Printed- Cars

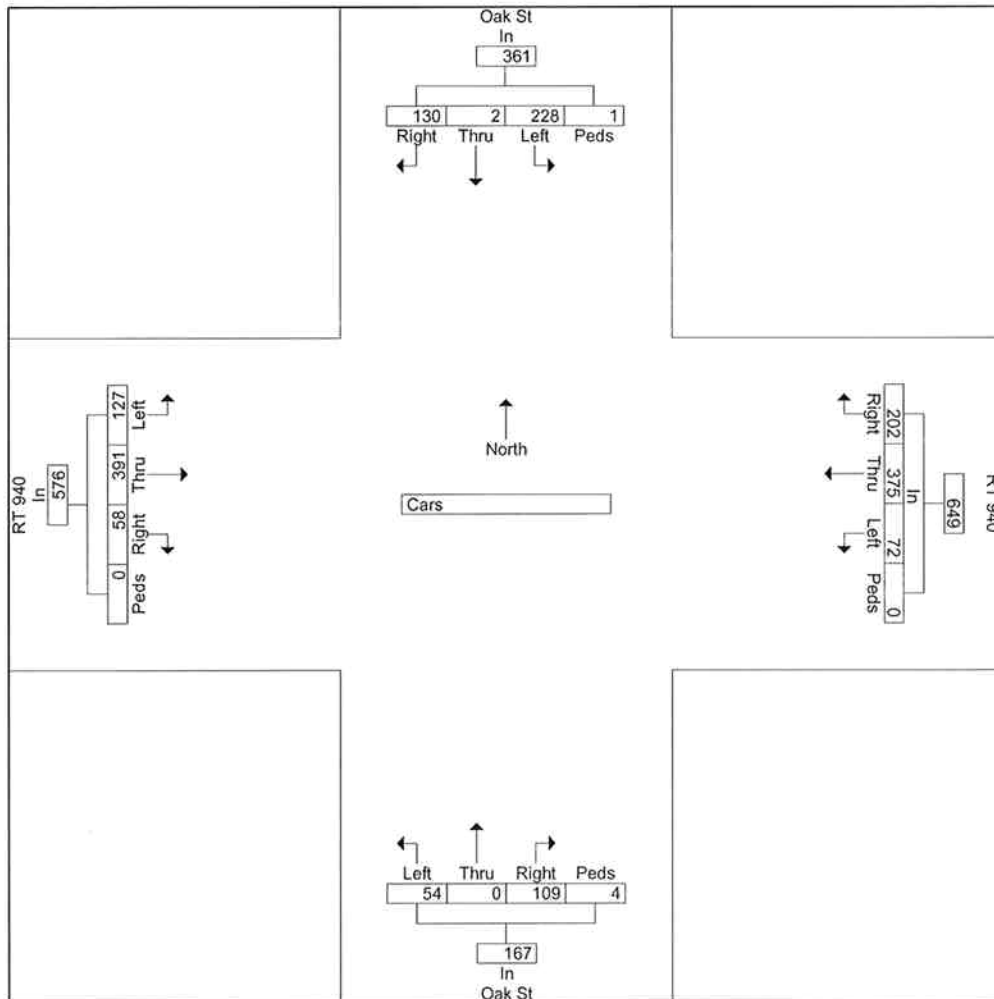
Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	33	0	59	0	92	46	65	26	0	137	30	0	13	0	43	10	103	41	0	154	426
04:15 PM	39	1	51	0	91	61	107	17	0	185	19	0	22	0	41	16	65	28	0	109	426
04:30 PM	27	1	64	1	93	37	86	23	0	146	29	0	7	0	36	17	121	27	0	165	440
04:45 PM	31	0	54	0	85	53	90	21	0	164	31	0	12	4	47	15	102	31	0	148	444
Total	130	2	228	1	361	197	348	87	0	632	109	0	54	4	167	58	391	127	0	576	1736
05:00 PM	42	1	33	0	76	51	92	11	0	154	25	0	12	0	37	11	76	33	2	122	389
05:15 PM	26	1	51	0	78	42	70	40	0	152	25	0	6	0	31	9	87	39	0	135	396
05:30 PM	27	0	53	0	80	56	76	18	2	152	32	0	9	0	41	9	83	31	2	125	398
05:45 PM	27	0	44	0	71	44	72	25	0	141	23	0	18	0	41	6	86	28	0	120	373
Total	122	2	181	0	305	193	310	94	2	599	105	0	45	0	150	35	332	131	4	502	1556
06:00 PM	35	1	47	0	83	47	54	17	1	119	14	0	14	0	28	8	78	36	0	122	352
06:15 PM	31	2	48	0	81	37	57	16	1	111	29	0	6	1	36	10	83	43	1	137	365
06:30 PM	29	2	50	0	81	43	75	23	0	141	25	0	9	2	36	9	65	19	1	94	352
06:45 PM	27	0	42	0	69	42	60	11	0	113	25	0	8	0	33	7	58	28	0	93	308
Total	122	5	187	0	314	169	246	67	2	484	93	0	37	3	133	34	284	126	2	446	1377
07:00 PM	28	1	44	0	73	33	55	13	0	101	21	0	5	0	26	9	94	36	0	139	339
07:15 PM	26	0	42	0	68	39	80	13	0	132	25	0	6	0	31	7	54	30	0	91	322
07:30 PM	18	1	47	0	66	22	44	21	0	87	10	0	6	0	16	6	75	25	0	106	275
07:45 PM	16	3	31	0	50	34	54	13	0	101	16	0	9	1	26	7	38	25	0	70	247
Total	88	5	164	0	257	128	233	60	0	421	72	0	26	1	99	29	261	116	0	406	1183
Grand Total	462	14	760	1	1237	687	1137	308	4	2136	379	0	162	8	549	156	1268	500	6	1930	5852
Apprch %	37.3	1.1	61.4	0.1		32.2	53.2	14.4	0.2		69.0	0.0	29.5	1.5		8.1	65.7	25.9	0.3		
Total %	7.9	0.2	13.0	0.0	21.1	11.7	19.4	5.3	0.1	36.5	6.5	0.0	2.8	0.1	9.4	2.7	21.7	8.5	0.1	33.0	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022-8  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

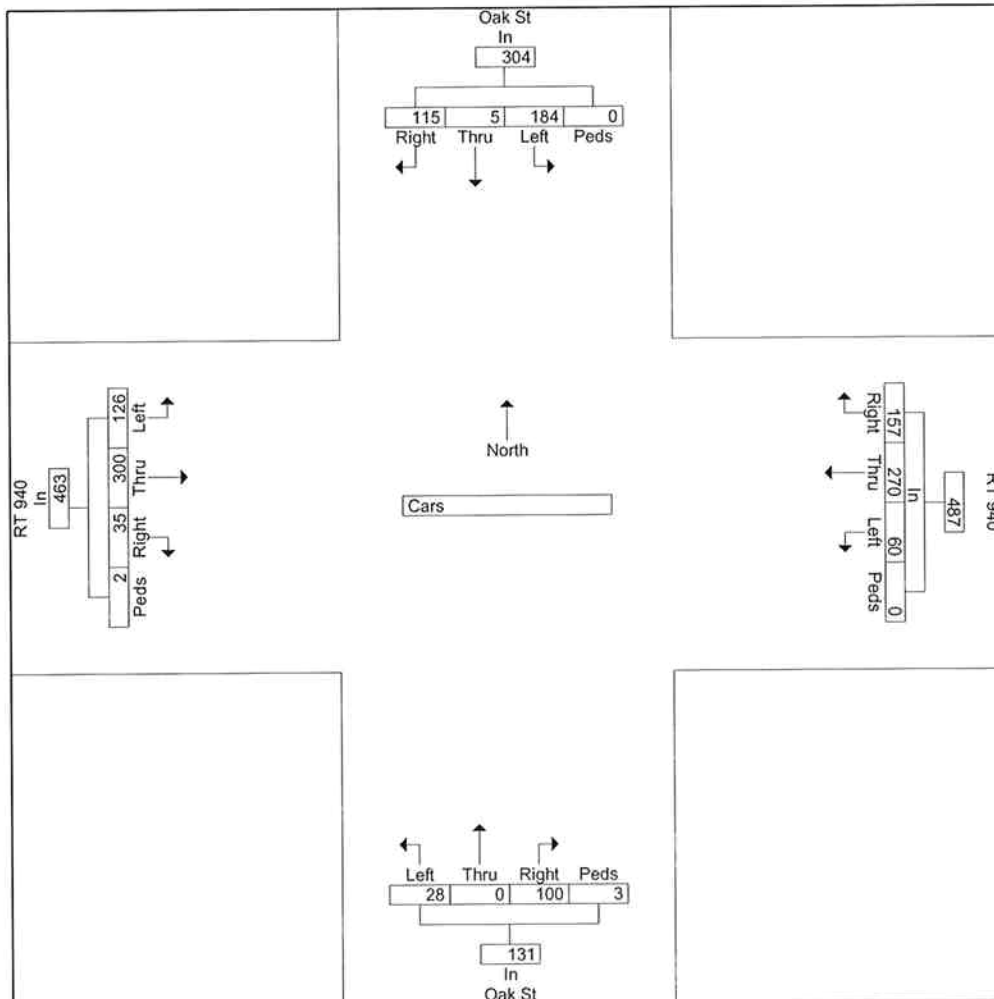
Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:00 PM					04:15 PM					04:00 PM					04:00 PM					
Volume	130	2	228	1	361	202	375	72	0	649	109	0	54	4	167	58	391	127	0	576	
Percent	36.0	0.6	63.2	0.3		31.1	57.8	11.1	0.0		65.3	0.0	32.3	2.4		10.1	67.9	22.0	0.0		
High Int. Peak Factor	04:30 PM					04:15 PM					04:45 PM					04:30 PM					
Volume	27	1	64	1	93	61	107	17	0	185	31	0	12	4	47	17	121	27	0	165	
					0.97					0.87					0.88					0.87	
					0					7					8					3	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022-8  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	Oak St From North					RT 940 From East					Oak St From South					RT 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:30 PM					06:15 PM					06:15 PM					
Volume	115	5	184	0	304	157	270	60	0	487	100	0	28	3	131	35	300	126	2	463	
Percent	37.8	1.6	60.5	0.0		32.2	55.4	12.3	0.0		76.3	0.0	21.4	2.3		7.6	64.8	27.2	0.4		
High Int. Volume	06:15 PM					06:30 PM					06:15 PM					07:00 PM					
Peak Factor	31	2	48	0	81	43	75	23	0	141	29	0	6	1	36	9	94	36	0	139	
					0.938					0.863					0.910					0.833	



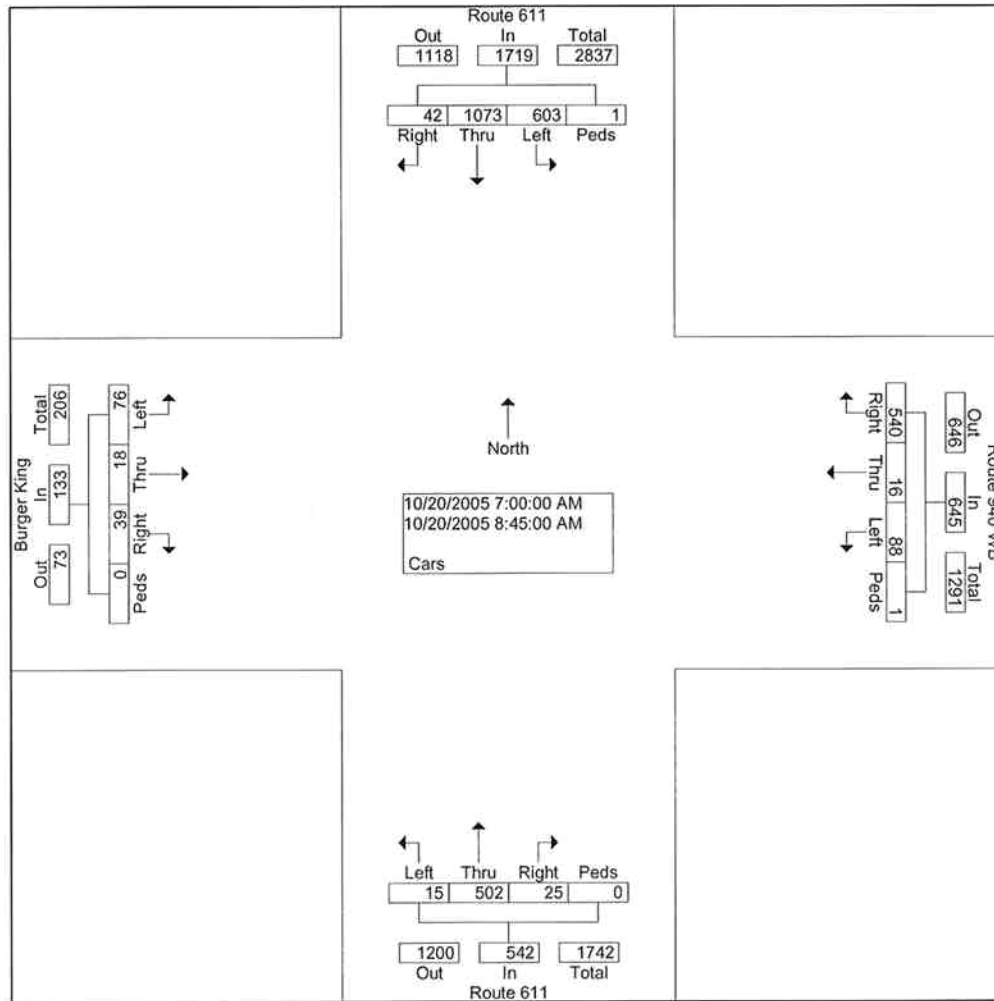
Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 WB  
 Date: Thursday, October 20, 2005  
 Counter: JT

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

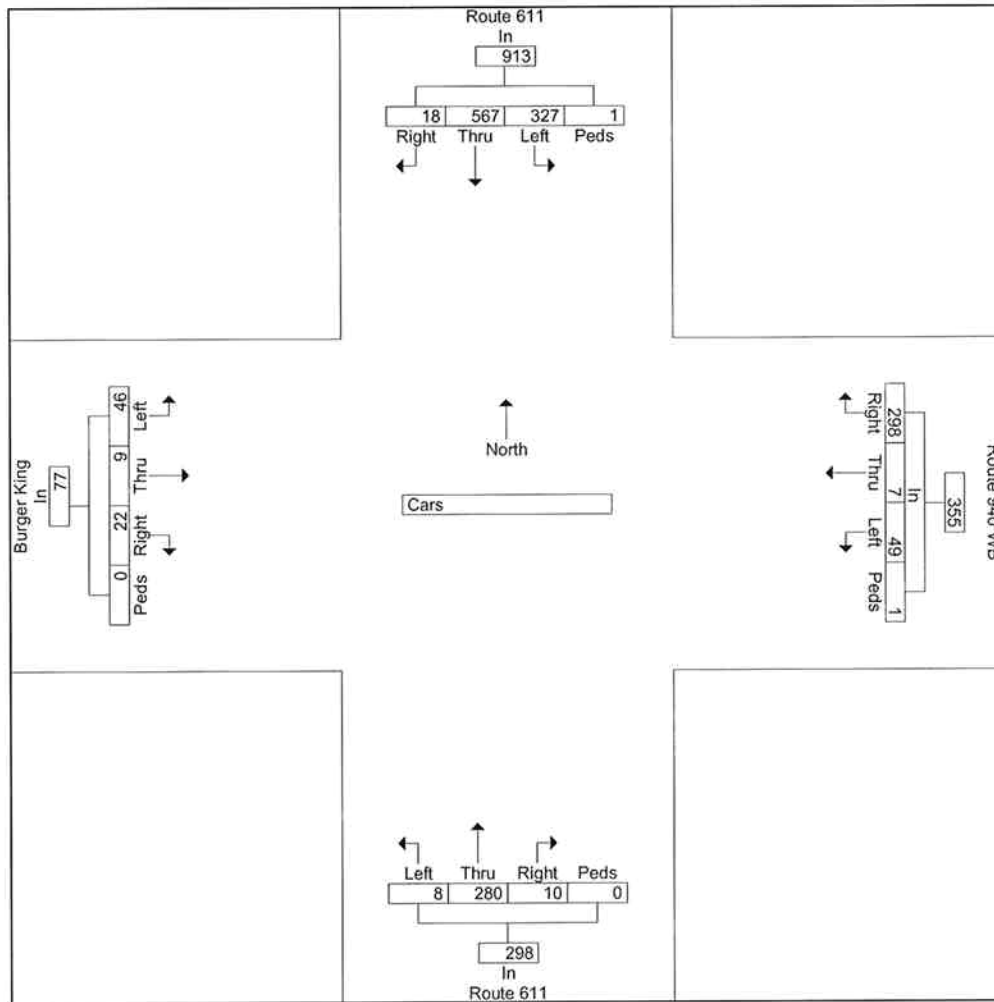
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Route 611 From North					Route 940 WB From East					Route 611 From South					Burger King From West					Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
7:00 AM	2	166	74	0	242	62	2	2	0	66	3	56	3	0	62	8	3	14	0	25	3
7:15 AM	5	130	68	1	204	60	2	8	0	70	2	60	5	0	67	5	4	9	0	18	3
7:30 AM	7	135	91	0	233	61	1	11	0	73	1	65	1	0	67	6	0	9	0	15	3
7:45 AM	4	136	94	0	234	111	4	12	0	127	6	89	0	0	95	3	2	14	0	19	4
Total	18	567	327	1	913	294	9	33	0	336	12	270	9	0	291	22	9	46	0	77	16
8:00 AM	8	142	68	0	218	67	1	12	0	80	1	66	2	0	69	3	2	9	0	14	3
8:15 AM	3	121	77	0	201	59	1	14	1	75	1	56	2	0	59	5	1	5	0	11	3
8:30 AM	5	121	71	0	197	54	2	12	0	68	3	47	2	0	52	4	3	12	0	19	3
8:45 AM	8	122	60	0	190	66	3	17	0	86	8	63	0	0	71	5	3	4	0	12	3
Total	24	506	276	0	806	246	7	55	1	309	13	232	6	0	251	17	9	30	0	56	14
Grand Total	42	1073	603	1	1719	540	16	88	1	645	25	502	15	0	542	39	18	76	0	133	30
pprch %	2.4	62.4	35.1	0.1		83.7	2.5	13.6	0.2		4.6	92.6	2.8	0.0		29.3	13.5	57.1	0.0		
Total %	1.4	35.3	19.8	0.0	56.6	17.8	0.5	2.9	0.0	21.2	0.8	16.5	0.5	0.0	17.8	1.3	0.6	2.5	0.0	4.4	



Start Time	Route 611 From North					Route 940 WB From East					Route 611 From South					Burger King From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:00 AM					07:30 AM					07:15 AM					07:00 AM					
Volume	18	567	327	1	913	298	7	49	1	355	10	280	8	0	298	22	9	46	0	77	
Percent	2.0	62.1	35.8	0.1		83.9	2.0	13.8	0.3		3.4	94.0	2.7	0.0		28.6	11.7	59.7	0.0		
High Int.	07:00 AM					07:45 AM					07:45 AM					07:00 AM					
Volume	2	166	74	0	242	111	4	12	0	127	6	89	0	0	95	8	3	14	0	25	
Peak Factor	0.943					0.699					0.784					0.770					



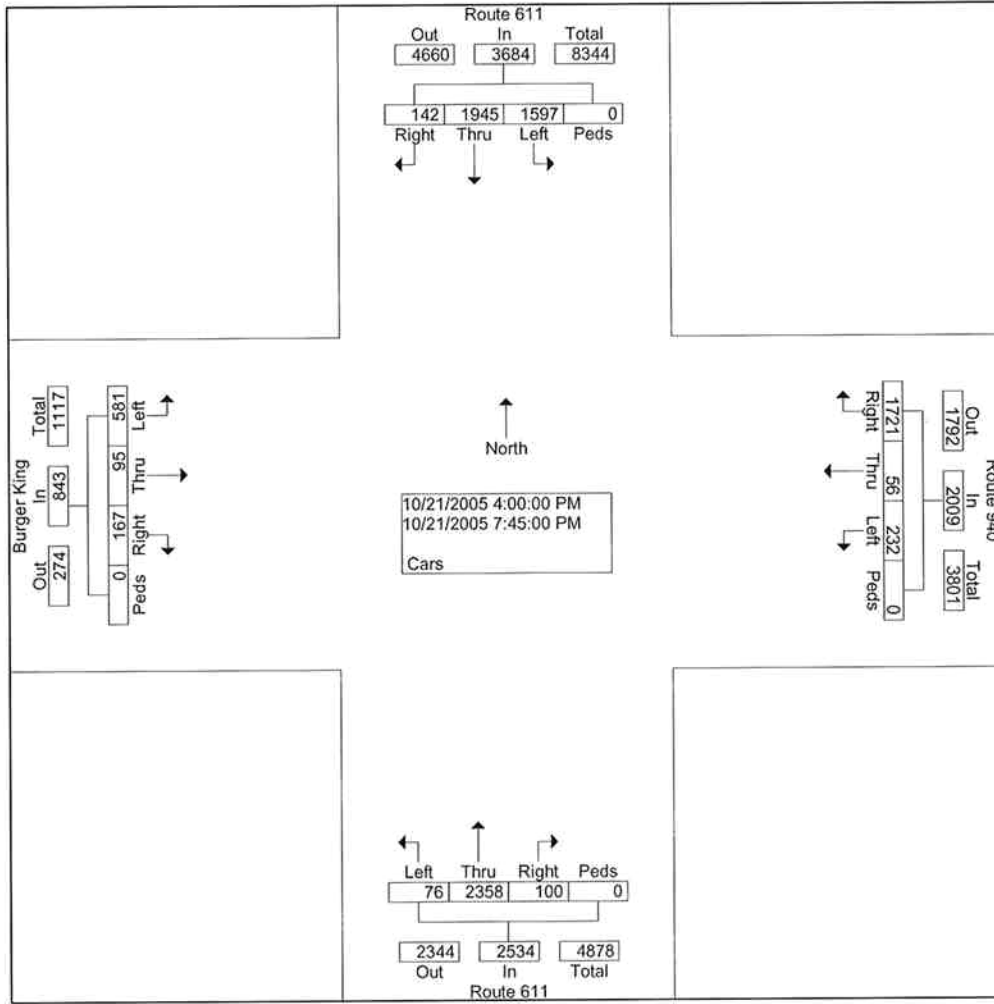
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 WB  
 Date: Friday, October 21, 2005  
 Counter: JT

File Name : BG1021~2  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	10	143	106	0	259	106	6	13	0	125	3	157	6	0	166	8	5	48	0	61	611
04:15 PM	10	141	137	0	288	157	4	17	0	178	13	137	8	0	158	21	8	24	0	53	677
04:30 PM	13	190	142	0	345	130	6	28	0	164	4	162	8	0	174	10	4	59	0	73	756
04:45 PM	20	175	125	0	320	132	1	13	0	146	4	191	3	0	198	17	5	56	0	78	742
Total	53	649	510	0	1212	525	17	71	0	613	24	647	25	0	696	56	22	187	0	265	2786
05:00 PM	7	140	147	0	294	142	7	25	0	174	8	163	4	0	175	7	10	51	0	68	711
05:15 PM	10	135	102	0	247	121	5	23	0	149	7	181	7	0	195	8	8	56	0	72	663
05:30 PM	8	128	109	0	245	132	4	6	0	142	8	162	3	0	173	11	5	51	0	67	627
05:45 PM	8	126	103	0	237	113	3	12	0	128	10	160	5	0	175	11	11	48	0	70	610
Total	33	529	461	0	1023	508	19	66	0	593	33	666	19	0	718	37	34	206	0	277	2611
06:00 PM	6	98	112	0	216	120	4	17	0	141	8	157	5	0	170	12	2	36	0	50	577
06:15 PM	14	99	84	0	197	117	1	12	0	130	5	129	5	0	139	10	6	42	0	58	524
06:30 PM	9	116	82	0	207	84	1	13	0	98	4	133	6	0	143	11	6	14	0	31	479
06:45 PM	6	112	94	0	212	92	4	11	0	107	4	117	4	0	125	14	12	30	0	56	500
Total	35	425	372	0	832	413	10	53	0	476	21	536	20	0	577	47	26	122	0	195	2080
07:00 PM	8	97	76	0	181	71	3	8	0	82	6	150	4	0	160	11	2	19	0	32	455
07:15 PM	3	98	63	0	164	74	5	6	0	85	9	117	2	0	128	8	6	11	0	25	402
07:30 PM	7	79	56	0	142	60	1	15	0	76	4	112	5	0	121	4	3	25	0	32	371
07:45 PM	3	68	59	0	130	70	1	13	0	84	3	130	1	0	134	4	2	11	0	17	365
Total	21	342	254	0	617	275	10	42	0	327	22	509	12	0	543	27	13	66	0	106	1593
Grand Total	142	1945	1597	0	3684	1721	56	232	0	2009	100	2358	76	0	2534	167	95	581	0	843	9070
Apprch %	3.9	52.8	43.3	0.0		85.7	2.8	11.5	0.0		3.9	93.1	3.0	0.0		19.8	11.3	68.9	0.0		
Total %	1.6	21.4	17.6	0.0	40.6	19.0	0.6	2.6	0.0	22.1	1.1	26.0	0.8	0.0	27.9	1.8	1.0	6.4	0.0	9.3	





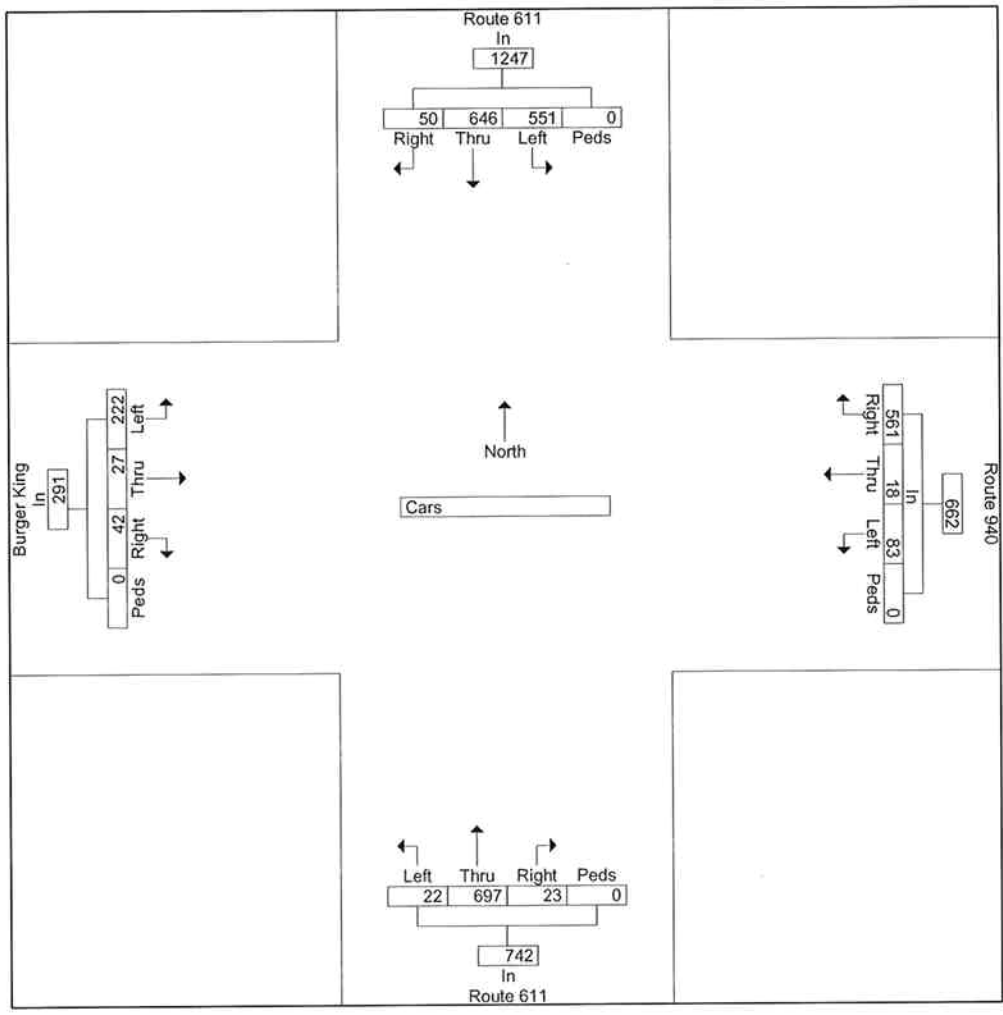
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~2  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	

Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1

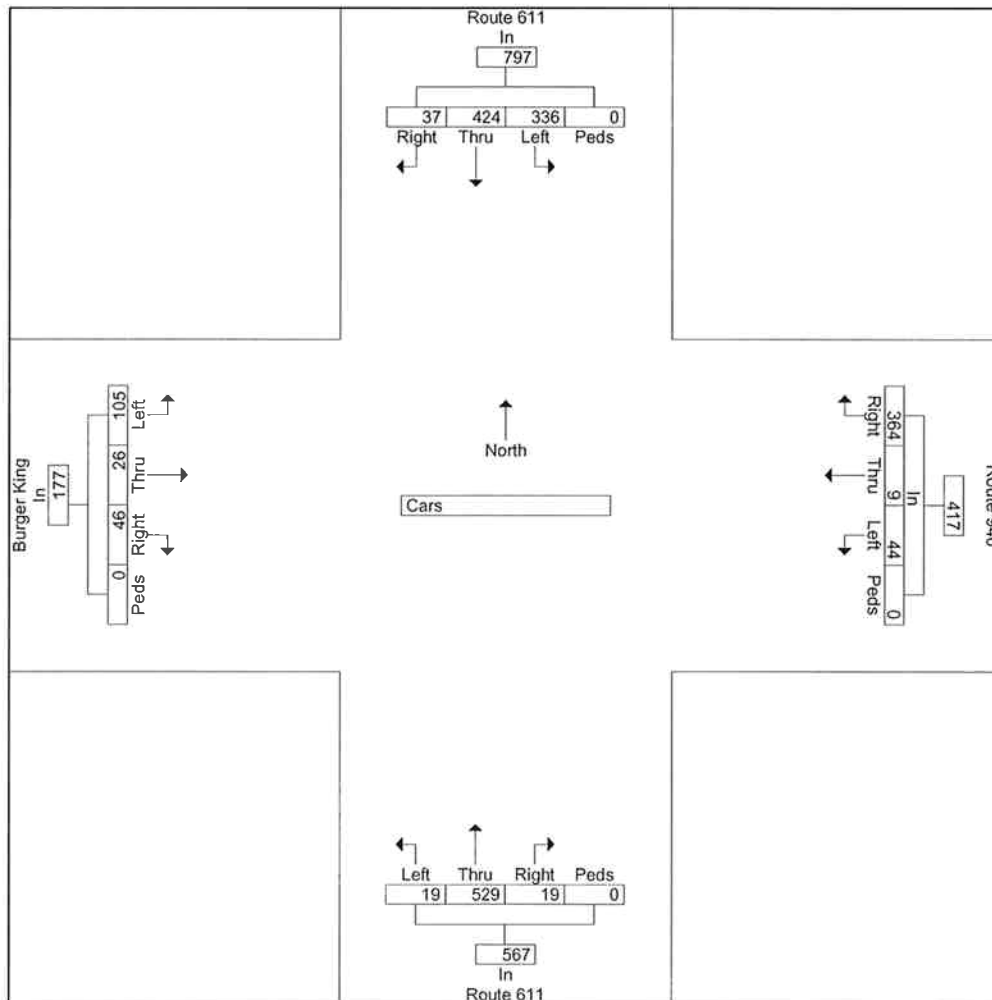
By Approach	04:15 PM					04:15 PM					04:30 PM					04:30 PM				
Volume	50	646	551	0	1247	561	18	83	0	662	23	697	22	0	742	42	27	222	0	291
Percent	4.0	51.8	44.2	0.0		84.7	2.7	12.5	0.0		3.1	93.9	3.0	0.0		14.4	9.3	76.3	0.0	
High Int. Peak Factor	04:30 PM					04:15 PM					04:45 PM					04:45 PM				
	13	190	142	0	345	157	4	17	0	178	4	191	3	0	198	17	5	56	0	78
	0.90					0.93					0.93					0.93				
	4					0					7					3				



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~2  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour	From 06:15 PM to 07:45 PM - Peak 1 of 1																				
By Approach	06:15 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	37	424	336	0	797	364	9	44	0	417	19	529	19	0	567	46	26	105	0	177	
Percent	4.6	53.2	42.2	0.0		87.3	2.2	10.6	0.0		3.4	93.3	3.4	0.0		26.0	14.7	59.3	0.0		
High Int. Peak Factor	06:45 PM					06:15 PM					07:00 PM					06:15 PM					
Volume	6	112	94	0	212	117	1	12	0	130	6	150	4	0	160	10	6	42	0	58	
Peak Factor	0.94					0.80					0.88					0.76					
	0					2					6					3					



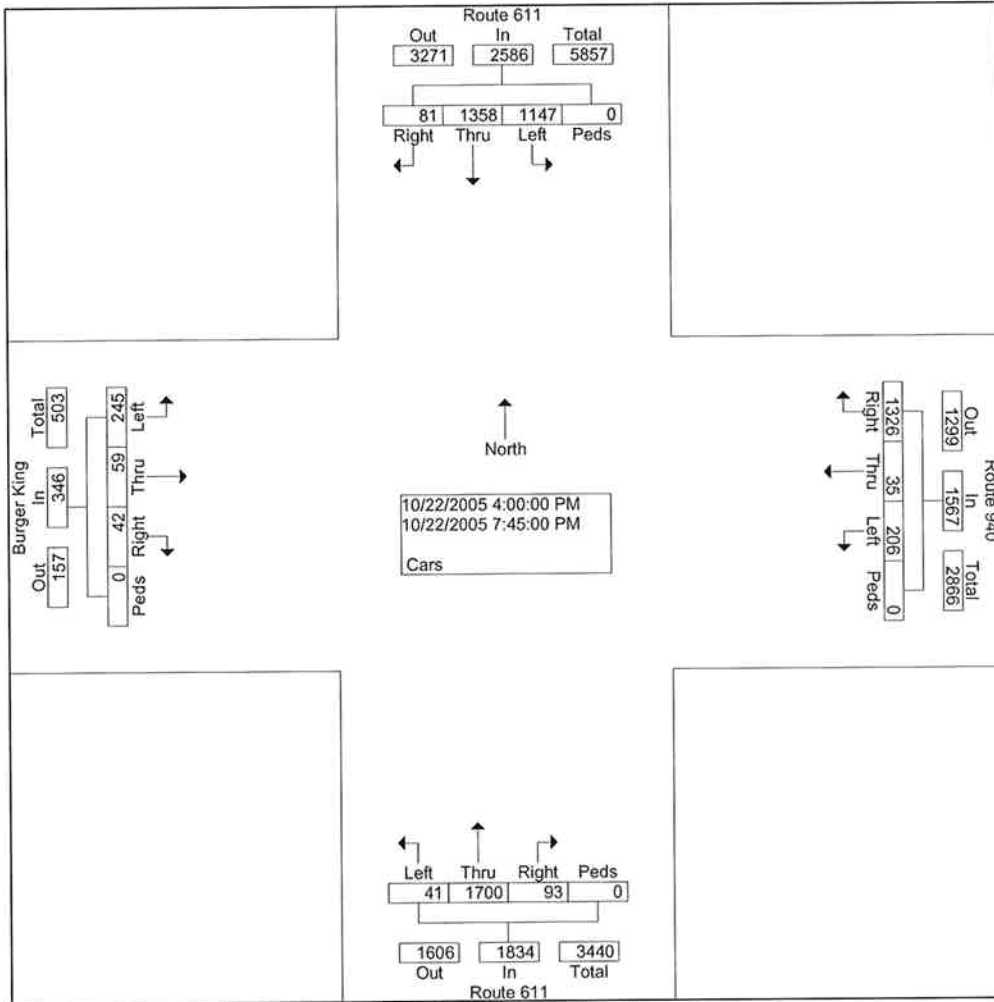
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 WB  
 Date: Saturday, October 22, 2005  
 Counter: JT

File Name : BG1022~2  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 1

Groups Printed- Cars

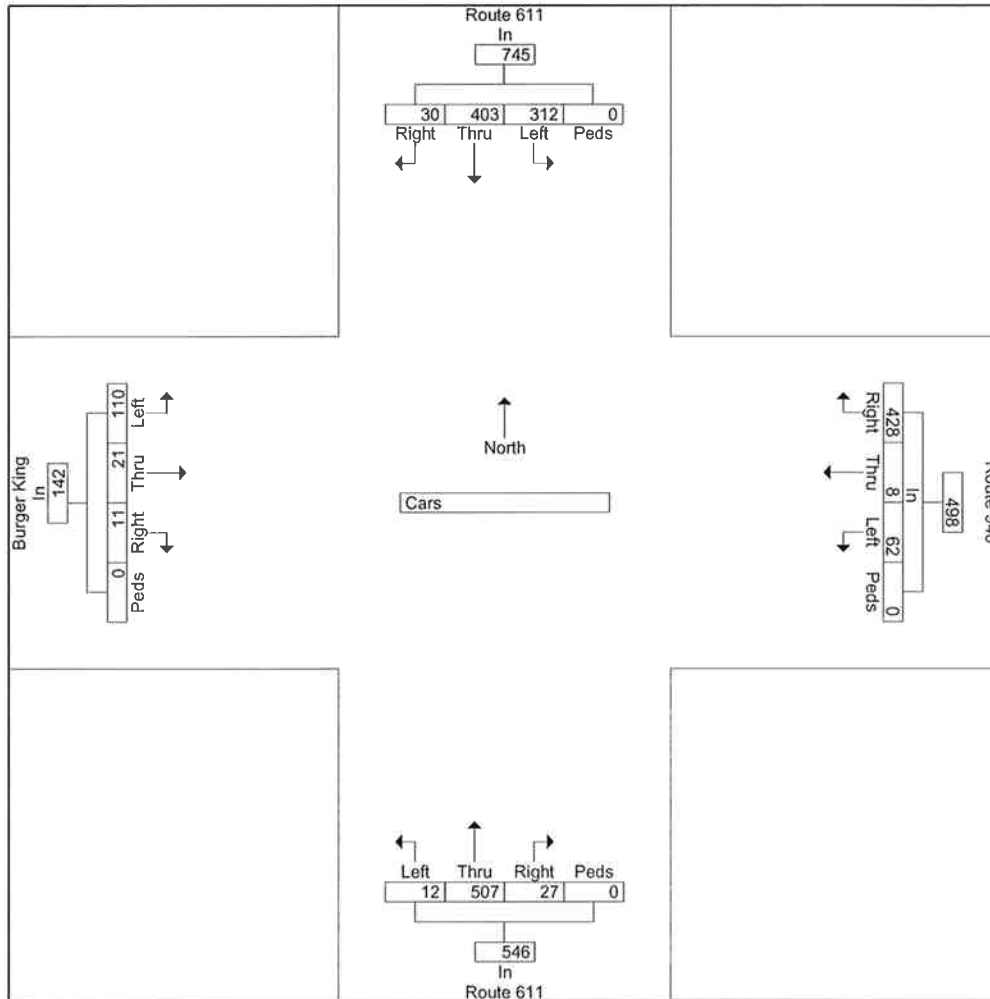
Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	12	103	83	0	198	92	3	18	0	113	5	104	2	0	111	1	8	17	0	26	448
04:15 PM	4	85	58	0	147	116	3	19	0	138	10	155	5	0	170	3	3	19	0	25	480
04:30 PM	8	115	87	0	210	97	1	13	0	111	4	132	2	0	138	5	6	48	0	59	518
04:45 PM	6	100	84	0	190	110	2	16	0	128	5	114	2	0	121	2	4	26	0	32	471
Total	30	403	312	0	745	415	9	66	0	490	24	505	11	0	540	11	21	110	0	142	1917
05:00 PM	5	78	79	0	162	105	2	14	0	121	8	106	3	0	117	2	4	18	0	24	424
05:15 PM	6	89	52	0	147	76	1	13	0	90	11	119	2	0	132	1	2	14	0	17	386
05:30 PM	4	99	82	0	185	79	2	11	0	92	9	130	3	0	142	4	1	15	0	20	439
05:45 PM	2	91	73	0	166	101	2	18	0	121	8	115	2	0	125	2	3	18	0	23	435
Total	17	357	286	0	660	361	7	56	0	424	36	470	10	0	516	9	10	65	0	84	1684
06:00 PM	7	67	72	0	146	74	2	10	0	86	4	108	4	0	116	4	5	12	0	21	369
06:15 PM	5	74	85	0	164	72	3	12	0	87	3	96	3	0	102	2	6	13	0	21	374
06:30 PM	1	86	79	0	166	95	3	11	0	109	5	97	3	0	105	2	2	7	0	11	391
06:45 PM	6	72	69	0	147	78	2	13	0	93	4	80	0	0	84	4	0	7	0	11	335
Total	19	299	305	0	623	319	10	46	0	375	16	381	10	0	407	12	13	39	0	64	1469
07:00 PM	2	94	67	0	163	62	2	12	0	76	4	96	1	0	101	3	3	11	0	17	357
07:15 PM	8	78	52	0	138	52	2	13	0	67	5	96	3	0	104	3	4	8	0	15	324
07:30 PM	1	63	65	0	129	57	3	7	0	67	5	72	4	0	81	2	5	7	0	14	291
07:45 PM	4	64	60	0	128	60	2	6	0	68	3	80	2	0	85	2	3	5	0	10	291
Total	15	299	244	0	558	231	9	38	0	278	17	344	10	0	371	10	15	31	0	56	1263
Grand Total	81	1358	1147	0	2586	1326	35	206	0	1567	93	1700	41	0	1834	42	59	245	0	346	6333
Apprch %	3.1	52.5	44.4	0.0		84.6	2.2	13.1	0.0		5.1	92.7	2.2	0.0		12.1	17.1	70.8	0.0		
Total %	1.3	21.4	18.1	0.0	40.8	20.9	0.6	3.3	0.0	24.7	1.5	26.8	0.6	0.0	29.0	0.7	0.9	3.9	0.0	5.5	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~2  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

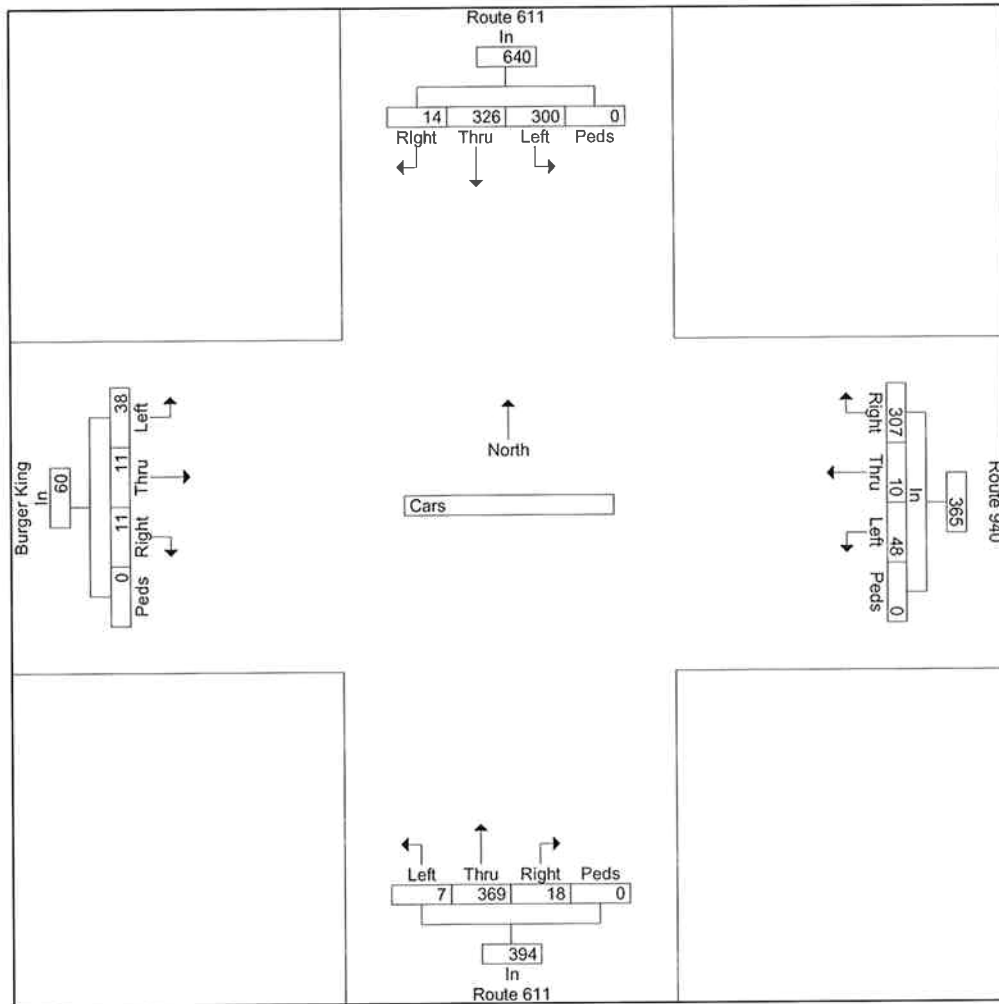
Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																					
By Approach	04:00 PM					04:15 PM					04:15 PM					04:00 PM					
Volume	30	403	312	0	745	428	8	62	0	498	27	507	12	0	546	11	21	110	0	142	
Percent	4.0	54.1	41.9	0.0		85.9	1.6	12.4	0.0		4.9	92.9	2.2	0.0		7.7	14.8	77.5	0.0		
High Int. Peak Factor	04:30 PM					04:15 PM					04:15 PM					04:30 PM					
Volume	8	115	87	0	210	116	3	19	0	138	10	155	5	0	170	5	6	48	0	59	
Peak Factor	0.887					0.902					0.803					0.602					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~2  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	Route 611 From North					Route 940 From East					Route 611 From South					Burger King From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:15 PM					06:15 PM					06:30 PM					06:15 PM					
Volume	14	326	300	0	640	307	10	48	0	365	18	369	7	0	394	11	11	38	0	60	
Percent	2.2	50.9	46.9	0.0		84.1	2.7	13.2	0.0		4.6	93.7	1.8	0.0		18.3	18.3	63.3	0.0		
High Int. Peak Factor	06:30 PM					06:30 PM					06:30 PM					06:15 PM					
Volume	1	86	79	0	166	95	3	11	0	109	5	97	3	0	105	2	6	13	0	21	
					0.96					0.83					0.93					0.71	
					4					7					8					4	



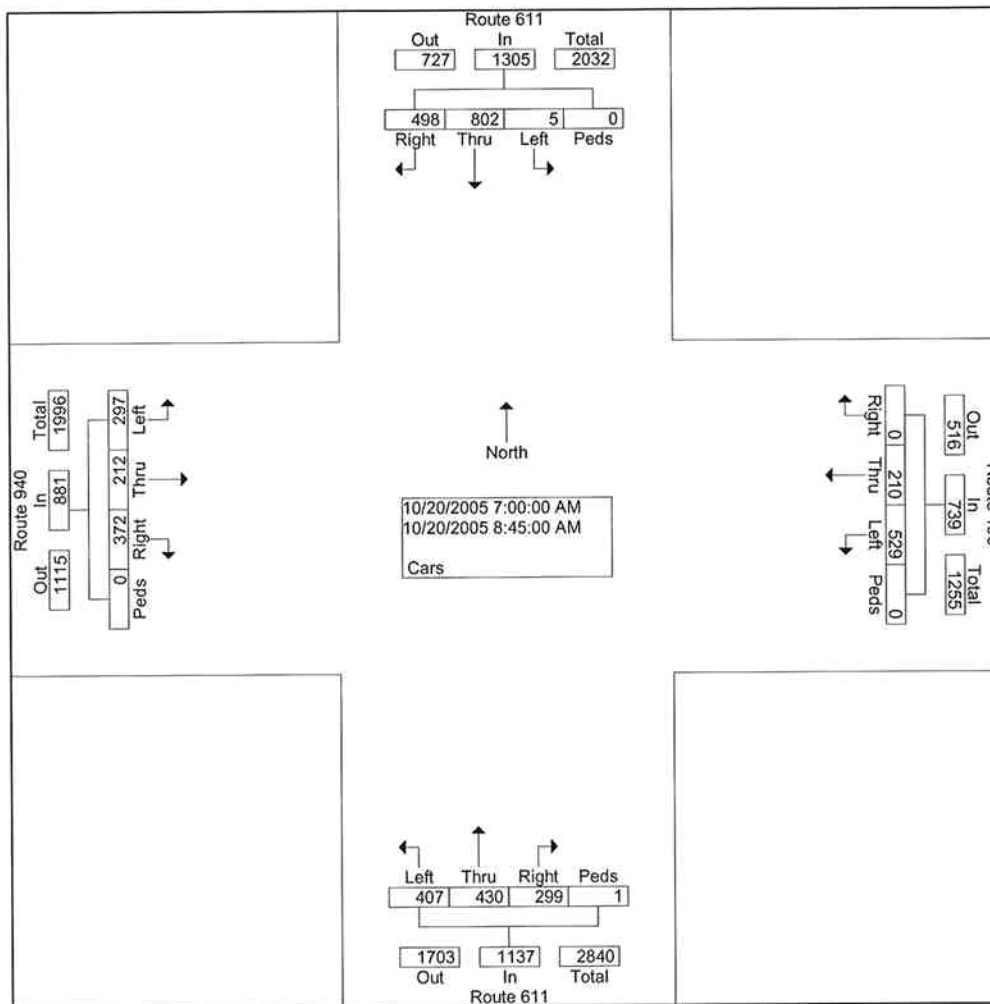
Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 EB  
 Date: Thursday, October 20, 2005  
 Counter: ET

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

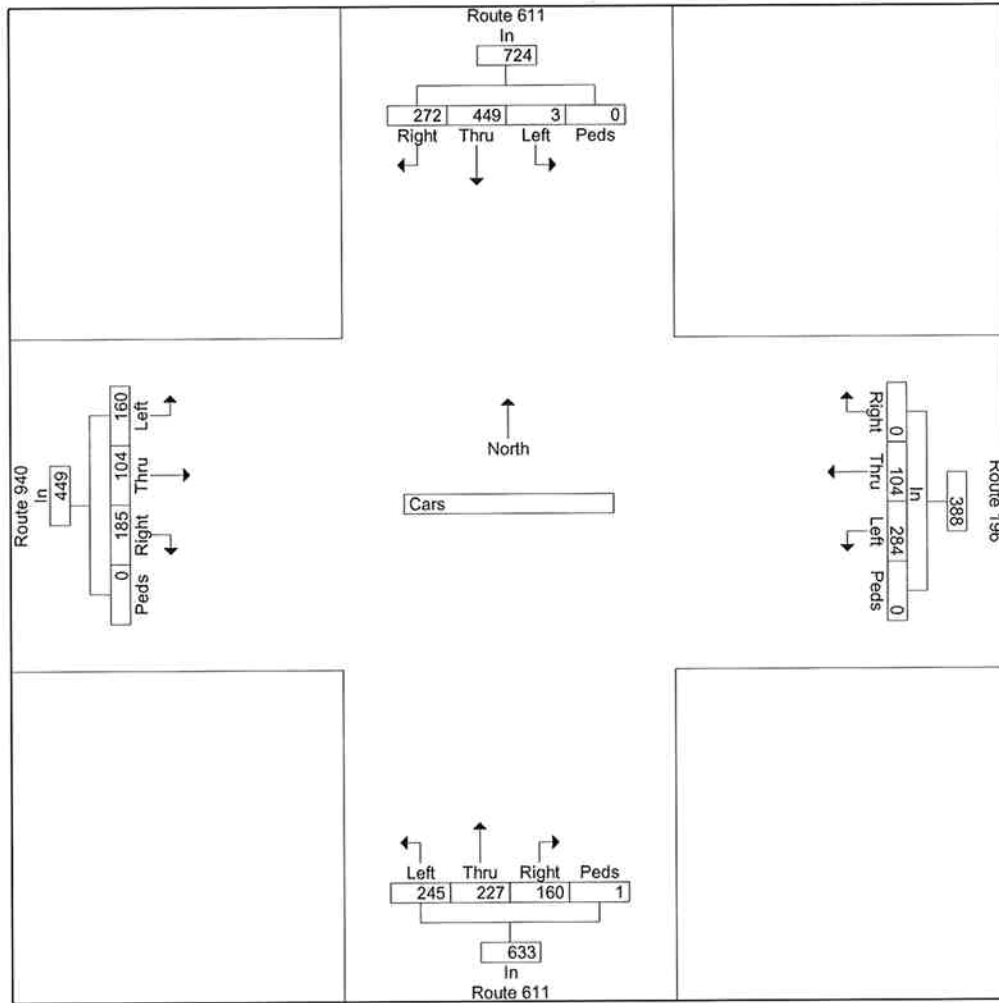
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2  
 Page No : 1

Groups Printed- Cars

Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Total				
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total					
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	
7:00 AM	54	121	1	0	176	0	21	55	0	76	23	70	36	0	129	45	20	31	0	96	0	0	0	0	0
7:15 AM	90	84	1	0	175	0	23	76	0	99	28	65	49	0	142	46	19	53	0	118	0	0	0	0	0
7:30 AM	63	115	1	0	179	0	31	64	0	95	36	37	64	0	137	50	30	42	0	122	0	0	0	0	0
7:45 AM	65	129	0	0	194	0	33	66	0	99	47	77	77	1	202	48	25	34	0	107	0	0	0	0	0
Total	272	449	3	0	724	0	108	261	0	369	134	249	226	1	610	189	94	160	0	443	0	0	0	0	0
8:00 AM	48	99	0	0	147	0	17	78	0	95	49	48	55	0	152	41	30	31	0	102	0	0	0	0	0
8:15 AM	54	86	1	0	141	0	24	65	0	89	41	46	40	0	127	49	23	40	0	112	0	0	0	0	0
8:30 AM	52	86	0	0	138	0	25	65	0	90	32	44	42	0	118	47	31	41	0	119	0	0	0	0	0
8:45 AM	72	82	1	0	155	0	36	60	0	96	43	43	44	0	130	46	34	25	0	105	0	0	0	0	0
Total	226	353	2	0	581	0	102	268	0	370	165	181	181	0	527	183	118	137	0	438	0	0	0	0	0
Grand Total	498	802	5	0	1305	0	210	529	0	739	299	430	407	1	1137	372	212	297	0	881	0	0	0	0	0
pprch %	38.2	61.5	0.4	0.0		0.0	28.4	71.6	0.0		26.3	37.8	35.8	0.1		42.2	24.1	33.7	0.0						
Total %	12.3	19.7	0.1	0.0	32.1	0.0	5.2	13.0	0.0	18.2	7.4	10.6	10.0	0.0	28.0	9.2	5.2	7.3	0.0	21.7					



Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					I To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																					
By Approach	07:00 AM					07:15 AM					07:15 AM					07:15 AM					
Volume	272	449	3	0	724	0	104	284	0	388	160	227	245	1	633	185	104	160	0	449	
Percent	37.6	62.0	0.4	0.0		0.0	26.8	73.2	0.0		25.3	35.9	38.7	0.2		41.2	23.2	35.6	0.0		
High Int.	07:45 AM					07:15 AM					07:45 AM					07:30 AM					
Volume	65	129	0	0	194	0	23	76	0	99	47	77	77	1	202	50	30	42	0	122	
Peak Factor	0.933					0.980					0.783					0.920					





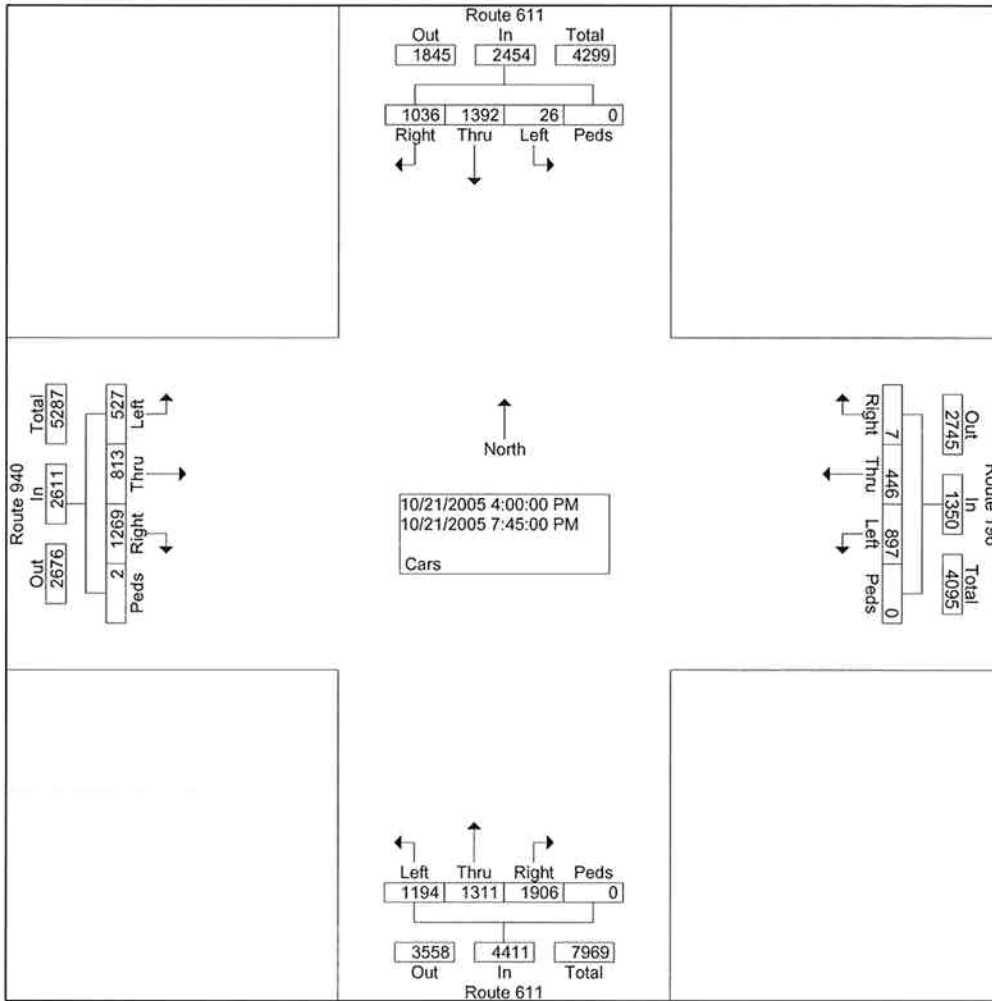
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 EB  
 Date: Friday, October 21, 2005  
 Counter: ET

File Name : BG1021~1  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 1

Groups Printed- Cars

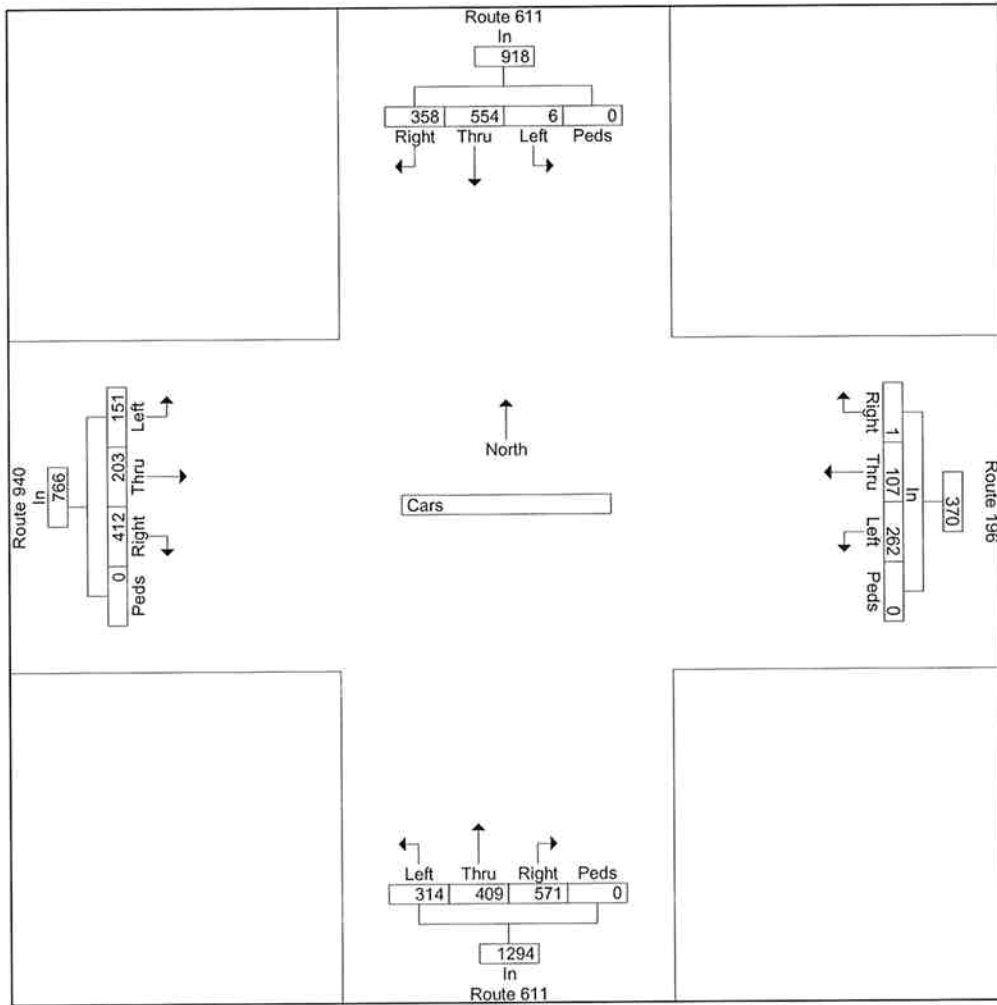
Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	79	133	3	0	215	0	28	51	0	79	108	107	76	0	291	80	59	24	0	163	748
04:15 PM	92	143	1	0	236	0	28	52	0	80	104	96	75	0	275	79	42	36	0	157	748
04:30 PM	98	144	2	0	244	1	33	59	0	93	131	94	79	0	304	126	52	39	0	217	858
04:45 PM	89	134	0	0	223	0	34	62	0	96	146	103	82	0	331	98	42	42	0	182	832
Total	358	554	6	0	918	1	123	224	0	348	489	400	312	0	1201	383	195	141	0	719	3186
05:00 PM	75	100	1	0	176	0	21	61	0	82	147	97	82	0	326	107	49	35	0	191	775
05:15 PM	60	78	0	0	138	0	23	67	0	90	141	106	83	0	330	81	60	35	0	176	734
05:30 PM	83	82	3	0	168	0	33	63	0	96	137	103	67	0	307	89	47	38	0	174	745
05:45 PM	57	90	2	0	149	1	30	71	0	102	134	95	83	0	312	74	56	31	0	161	724
Total	275	350	6	0	631	1	107	262	0	370	559	401	315	0	1275	351	212	139	0	702	2978
06:00 PM	43	83	1	0	127	0	30	47	0	77	129	92	81	0	302	83	59	31	0	173	679
06:15 PM	56	68	0	0	124	0	20	55	0	75	134	66	79	0	279	76	52	35	1	164	642
06:30 PM	58	82	1	0	141	3	32	58	0	93	108	67	60	0	235	73	54	28	0	155	624
06:45 PM	65	64	0	0	129	0	26	60	0	86	104	64	81	0	249	75	44	31	1	151	615
Total	222	297	2	0	521	3	108	220	0	331	475	289	301	0	1065	307	209	125	2	643	2560
07:00 PM	48	63	4	0	115	0	32	53	0	85	114	56	76	0	246	66	54	33	0	153	599
07:15 PM	46	44	2	0	92	2	21	42	0	65	96	58	57	0	211	68	43	32	0	143	511
07:30 PM	47	43	3	0	93	0	25	55	0	80	83	50	64	0	197	45	48	31	0	124	494
07:45 PM	40	41	3	0	84	0	30	41	0	71	90	57	69	0	216	49	52	26	0	127	498
Total	181	191	12	0	384	2	108	191	0	301	383	221	266	0	870	228	197	122	0	547	2102
Grand Total	1036	1392	26	0	2454	7	446	897	0	1350	1906	1311	1194	0	4411	1269	813	527	2	2611	10826
Apprch %	42.2	56.7	1.1	0.0		0.5	33.0	66.4	0.0		43.2	29.7	27.1	0.0		48.6	31.1	20.2	0.1		
Total %	9.6	12.9	0.2	0.0	22.7	0.1	4.1	8.3	0.0	12.5	17.6	12.1	11.0	0.0	40.7	11.7	7.5	4.9	0.0	24.1	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~1  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

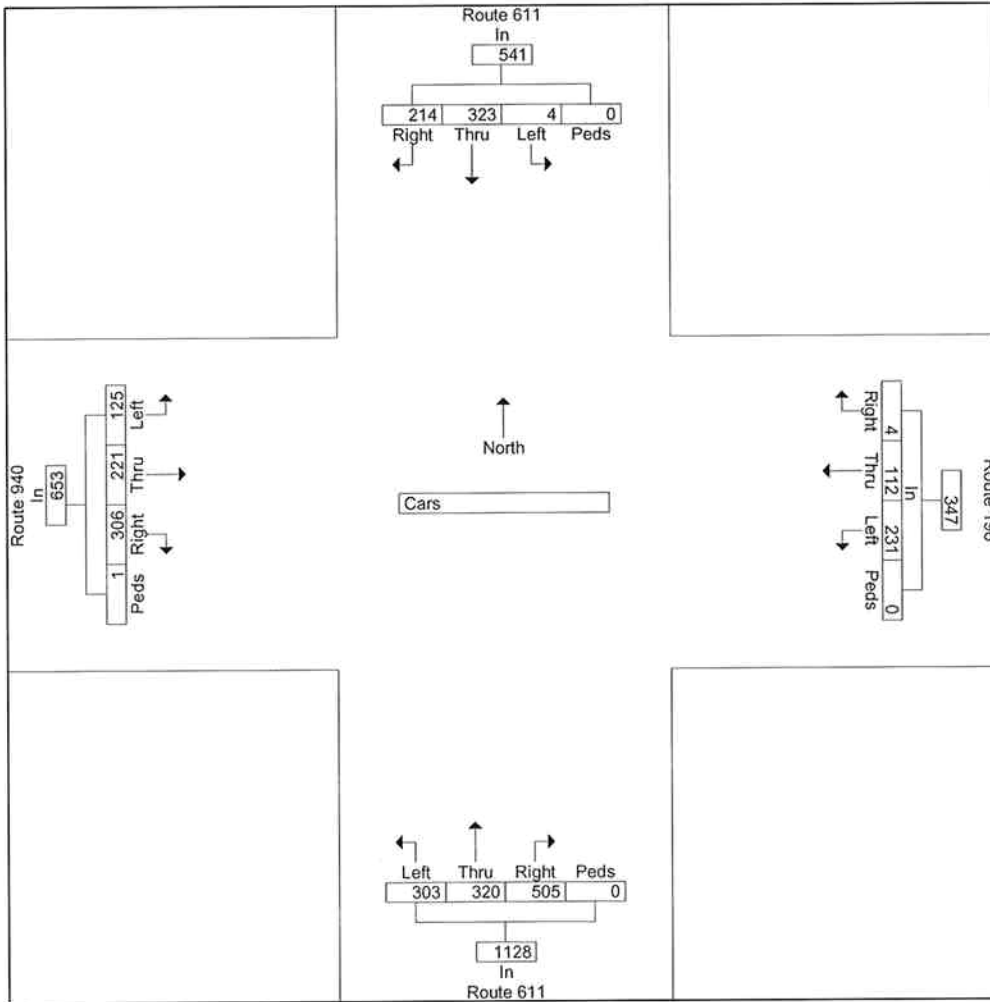
Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
By Approach	04:00 PM					05:00 PM					04:45 PM					04:30 PM					
Volume	358	554	6	0	918	1	107	262	0	370	571	409	314	0	1294	412	203	151	0	766	
Percent	39.0	60.3	0.7	0.0		0.3	28.9	70.8	0.0		44.1	31.6	24.3	0.0		53.8	26.5	19.7	0.0		
High Int. Volume	04:30 PM					05:45 PM					04:45 PM					04:30 PM					
Peak Factor	98	144	2	0	244	1	30	71	0	102	146	103	82	0	331	126	52	39	0	217	
	0.94					0.90					0.97					0.88					2
	1					7					7					2					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~1  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thru	Left	Peds	App. Total	Rig ht	Thru	Left	Peds	App. Total	Rig ht	Thru	Left	Peds	App. Total	Rig ht	Thru	Left	Peds	App. Total	
Peak Hour From 05:45 PM to 07:45 PM - Peak 1 of 1																					
By Approach	05:45 PM					05:45 PM					05:45 PM					05:45 PM					
Volume	214	323	4	0	541	4	112	231	0	347	505	320	303	0	1128	306	221	125	1	653	
Percent	39.6	59.7	0.7	0.0		1.2	32.3	66.6	0.0		44.8	28.4	26.9	0.0		46.9	33.8	19.1	0.2		
High Int. Peak Factor	05:45 PM					05:45 PM					05:45 PM					06:00 PM					
Volume	57	90	2	0	149	1	30	71	0	102	134	95	83	0	312	83	59	31	0	173	
	0.908					0.850					0.904					0.944					



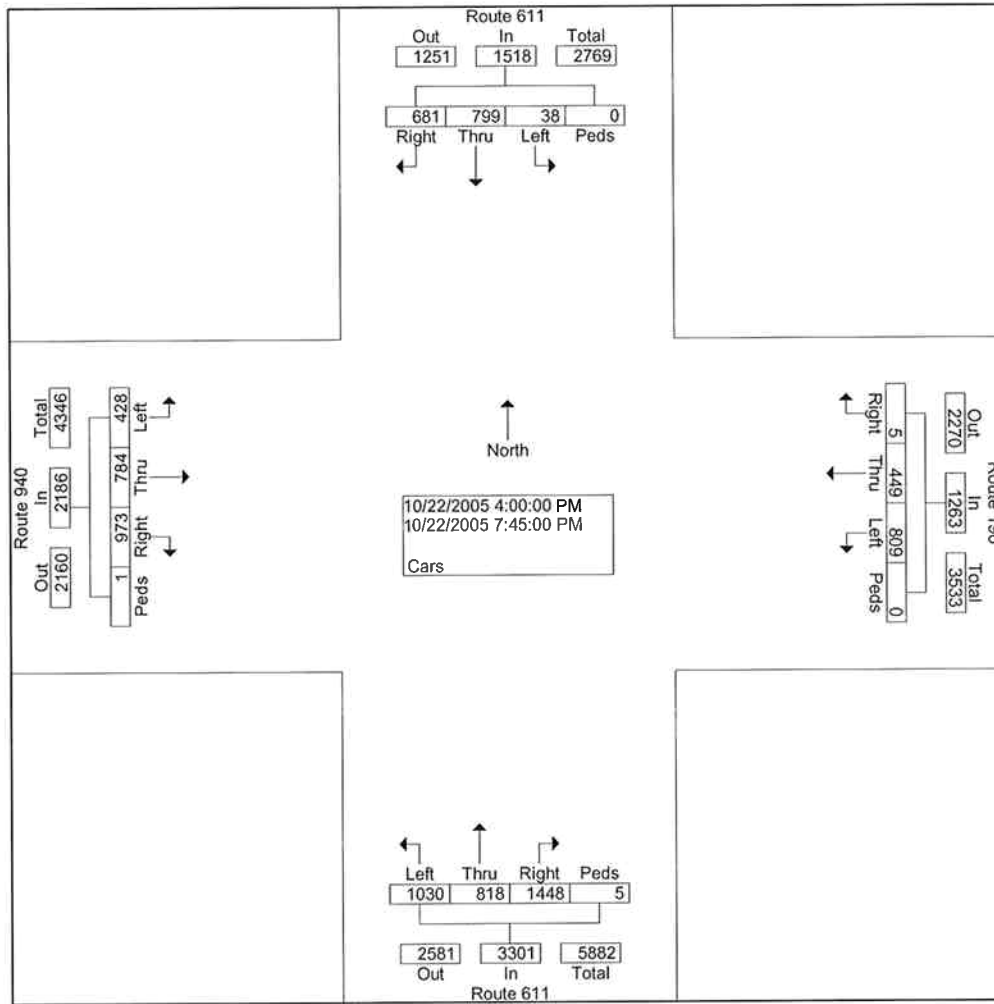
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

Location: Monroe County, PA  
 Intersection: Rt. 611 / Rt. 940 EB  
 Date: Saturday, October 22, 2005  
 Counter: ET

File Name : BG1022~1  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	49	61	3	0	113	1	26	57	0	84	82	62	63	0	207	82	52	26	0	160	564
04:15 PM	51	48	1	0	100	0	39	51	0	90	129	72	93	0	294	52	45	33	0	130	614
04:30 PM	49	65	0	0	114	0	24	66	0	90	118	57	81	0	256	81	45	34	0	160	620
04:45 PM	55	59	4	0	118	0	37	49	0	86	100	71	73	0	244	75	47	34	0	156	604
Total	204	233	8	0	445	1	126	223	0	350	429	262	310	0	1001	290	189	127	0	606	2402
05:00 PM	47	51	0	0	98	1	30	58	0	89	100	49	81	0	230	55	51	26	0	132	549
05:15 PM	47	46	3	0	96	1	34	51	0	86	90	63	63	0	216	62	66	22	1	151	549
05:30 PM	46	56	2	0	104	0	36	63	0	99	106	46	72	0	224	68	71	17	0	156	583
05:45 PM	36	57	4	0	97	0	35	50	0	85	111	54	70	0	235	46	52	35	0	133	550
Total	176	210	9	0	395	2	135	222	0	359	407	212	286	0	905	231	240	100	1	572	2231
06:00 PM	34	56	4	0	94	1	34	35	0	70	95	49	57	0	201	54	50	29	0	133	498
06:15 PM	35	46	1	0	82	0	21	56	0	77	72	54	58	4	188	59	45	34	0	138	485
06:30 PM	52	52	2	0	106	0	31	44	0	75	90	46	60	0	196	63	49	24	0	136	513
06:45 PM	38	51	1	0	90	0	25	52	0	77	74	38	57	1	170	45	40	26	0	111	448
Total	159	205	8	0	372	1	111	187	0	299	331	187	232	5	755	221	184	113	0	518	1944
07:00 PM	34	36	1	0	71	0	25	51	0	76	78	49	48	0	175	79	54	28	0	161	483
07:15 PM	46	40	4	0	90	0	20	45	0	65	77	36	54	0	167	51	43	21	0	115	437
07:30 PM	30	34	4	0	68	0	13	45	0	58	60	34	48	0	142	53	45	26	0	124	392
07:45 PM	32	41	4	0	77	1	19	36	0	56	66	38	52	0	156	48	29	13	0	90	379
Total	142	151	13	0	306	1	77	177	0	255	281	157	202	0	640	231	171	88	0	490	1691
Grand Total	681	799	38	0	1518	5	449	809	0	1263	1448	818	1030	5	3301	973	784	428	1	2186	8268
Apprch %	44.9	52.6	2.5	0.0		0.4	35.6	64.1	0.0		43.9	24.8	31.2	0.2		44.5	35.9	19.6	0.0		
Total %	8.2	9.7	0.5	0.0	18.4	0.1	5.4	9.8	0.0	15.3	17.5	9.9	12.5	0.1	39.9	11.8	9.5	5.2	0.0	26.4	



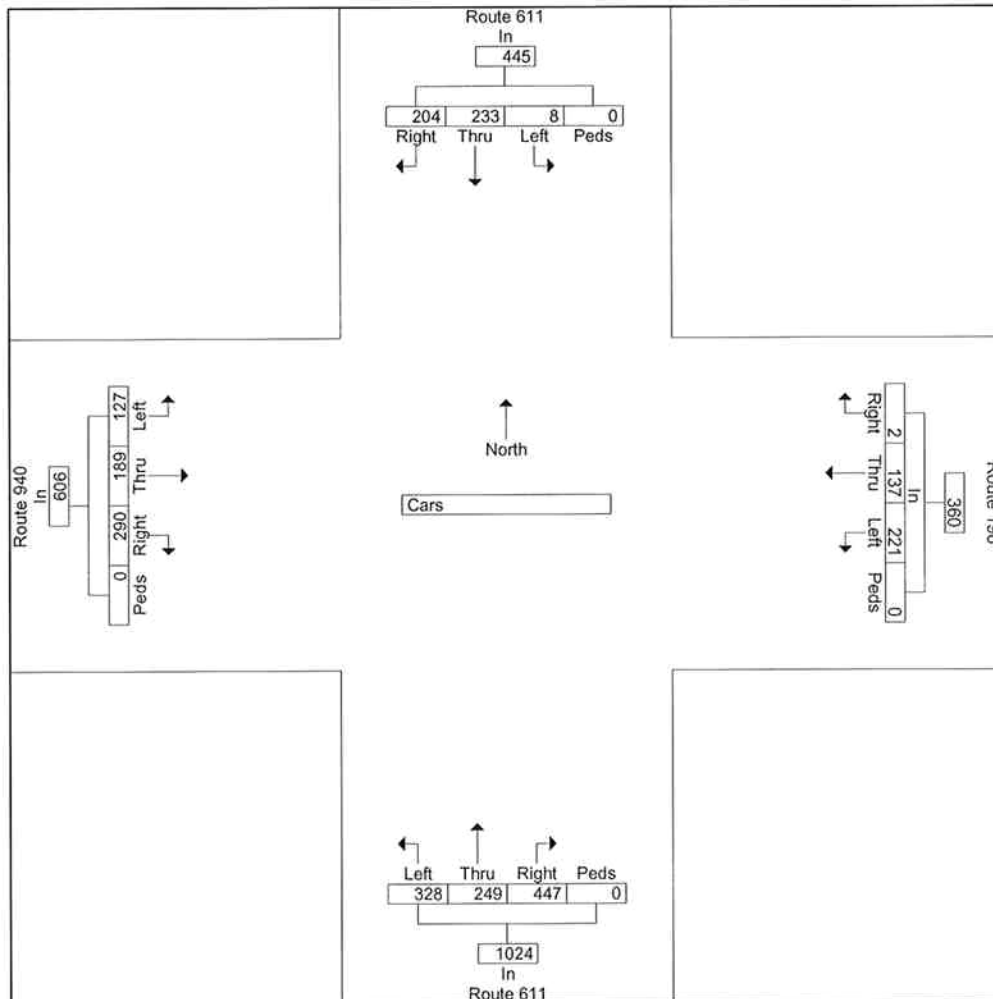
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~1  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	

Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1

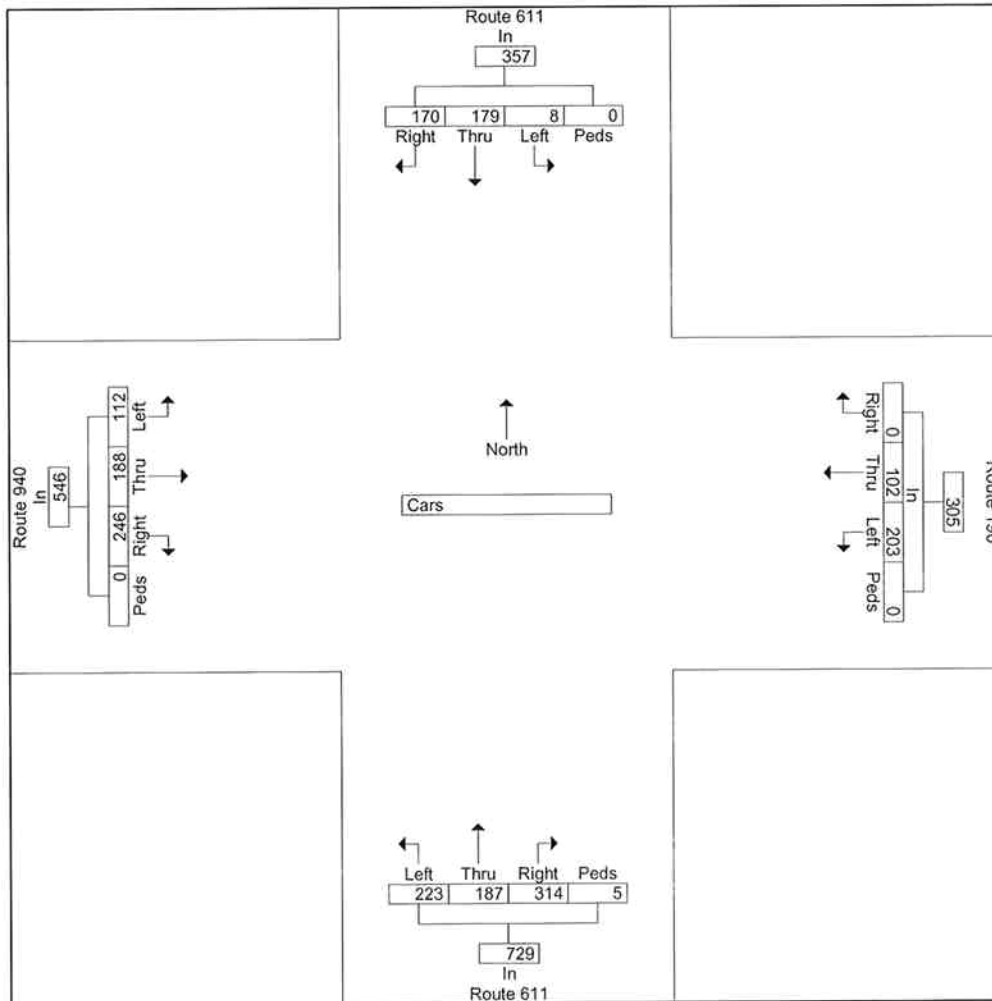
By Approach	04:00 PM					04:45 PM					04:15 PM					04:00 PM				
Volume	204	233	8	0	445	2	137	221	0	360	447	249	328	0	1024	290	189	127	0	606
Percent	45.	52.	1.8	0.0		0.6	38.	61.	0.0		43.	24.	32.	0.0		47.	31.	21.	0.0	
High Int. Peak Factor	04:45 PM					05:30 PM					04:15 PM					04:00 PM				
	55	59	4	0	118	0	36	63	0	99	129	72	93	0	294	82	52	26	0	160
	0.94					0.90					0.87					0.94				
	3					9					1					7				



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~1  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	Route 611 From North					Route 196 From East					Route 611 From South					Route 940 From West					Int. Total
	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	Rig ht	Thr u	Left	Ped s	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																					
By Approach	06:30 PM					06:15 PM					06:15 PM					06:15 PM					
Volume	170	179	8	0	357	0	102	203	0	305	314	187	223	5	729	246	188	112	0	546	
Percent	47.6	50.1	2.2	0.0		0.0	33.4	66.6	0.0		43.1	25.7	30.6	0.7		45.1	34.4	20.5	0.0		
High Int. Volume	06:30 PM					06:15 PM					06:30 PM					07:00 PM					
Peak Factor	52	52	2	0	106	0	21	56	0	77	90	46	60	0	196	79	54	28	0	161	
	0.84					0.99					0.93					0.84					
	2					0					0					8					





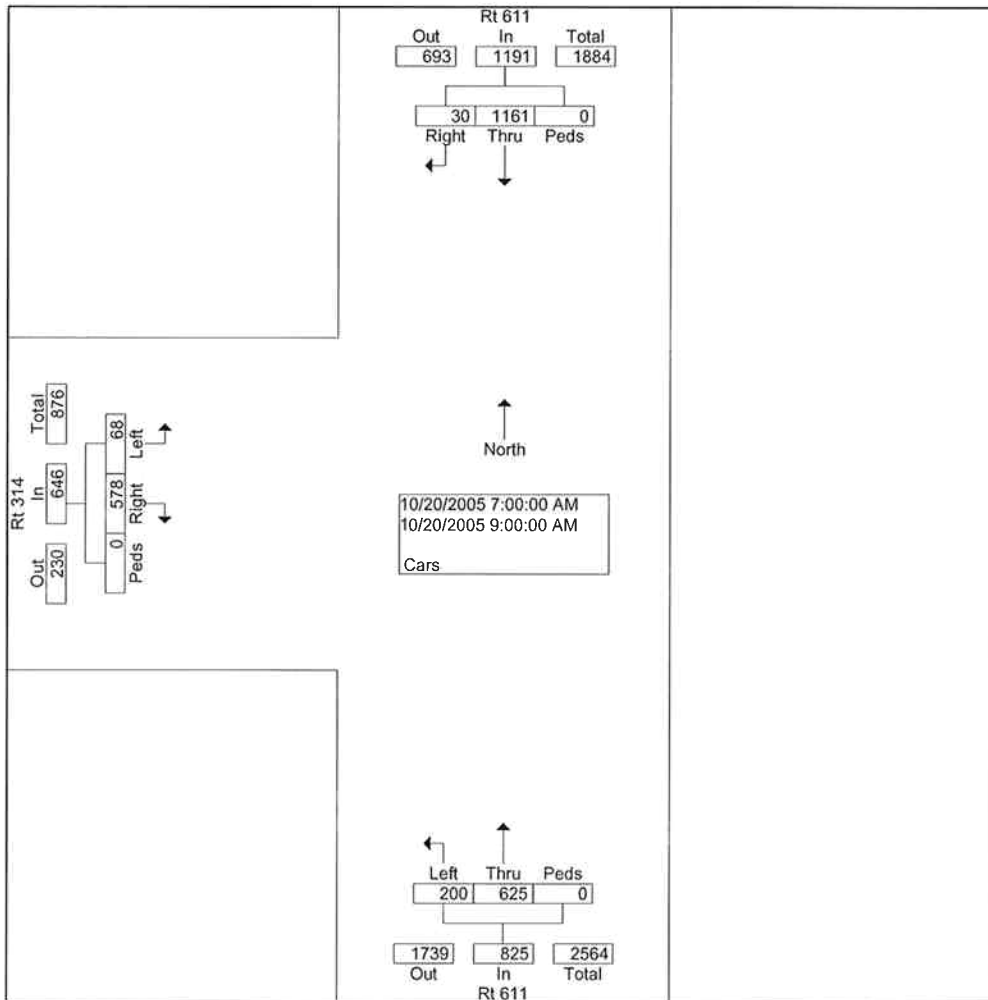
Location: Monroe County, PA  
 Intersection: Rt 611 & Rt 314(West)  
 Date: Thursday, October 20, 2005  
 Counter: wc

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

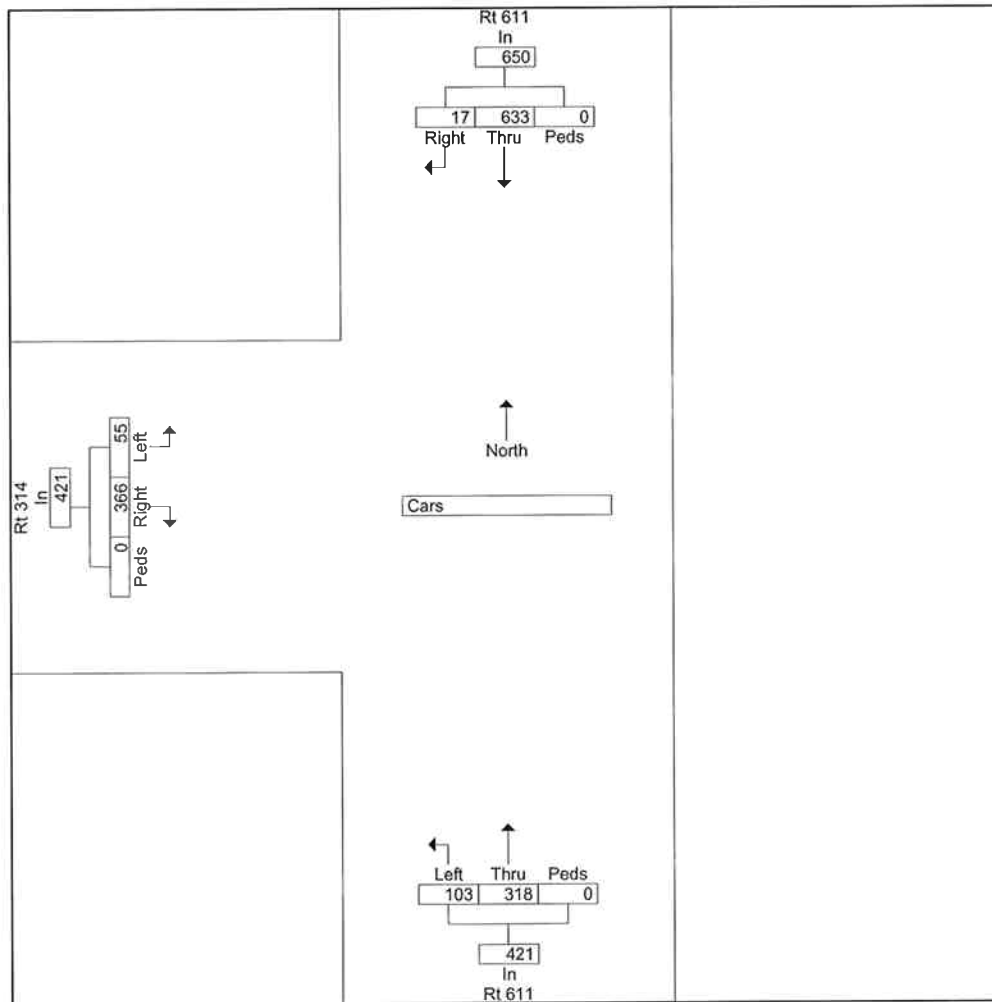
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	1	134	0	0	135	0	85	17	0	102	71	0	20	0	91	3
07:15 AM	7	148	0	0	155	0	82	25	0	107	106	0	21	0	127	3
07:30 AM	5	181	0	0	186	0	68	20	0	88	92	0	6	0	98	3
07:45 AM	4	170	0	0	174	0	98	25	0	123	97	0	8	0	105	4
Total	17	633	0	0	650	0	333	87	0	420	366	0	55	0	421	14
08:00 AM	3	129	0	0	132	0	70	33	0	103	70	0	2	0	72	3
08:15 AM	4	137	0	0	141	0	79	27	0	106	65	0	3	0	68	3
08:30 AM	4	134	0	0	138	0	58	25	0	83	41	0	1	0	42	2
08:45 AM	2	128	0	0	130	0	85	28	0	113	36	0	7	0	43	2
Total	13	528	0	0	541	0	292	113	0	405	212	0	13	0	225	11
Grand Total	30	1161	0	0	1191	0	625	200	0	825	578	0	68	0	646	26
Apprch %	2.5	97.5	0.0	0.0		0.0	75.8	24.2	0.0		89.5	0.0	10.5	0.0		
Total %	1.1	43.6	0.0	0.0	44.7	0.0	23.5	7.5	0.0	31.0	21.7	0.0	2.6	0.0	24.3	



Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 07:00 AM to 09:00 AM - Peak 1 of 1																
By Approach 07:00 AM						07:15 AM					07:00 AM					
Volume	17	633	0	0	650	0	318	103	0	421	366	0	55	0	421	
Percent	2.6	97.4	0.0	0.0		0.0	75.5	24.5	0.0		86.9	0.0	13.1	0.0		
High Int. 07:30 AM																
Volume	5	181	0	0	186	0	98	25	0	123	106	0	21	0	127	
Peak Factor	0.874					0.856					0.829					



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt 611 & Rt 314(West)

Date: Friday, October 21, 2005

Counter: wc

File Name : BG1021~4

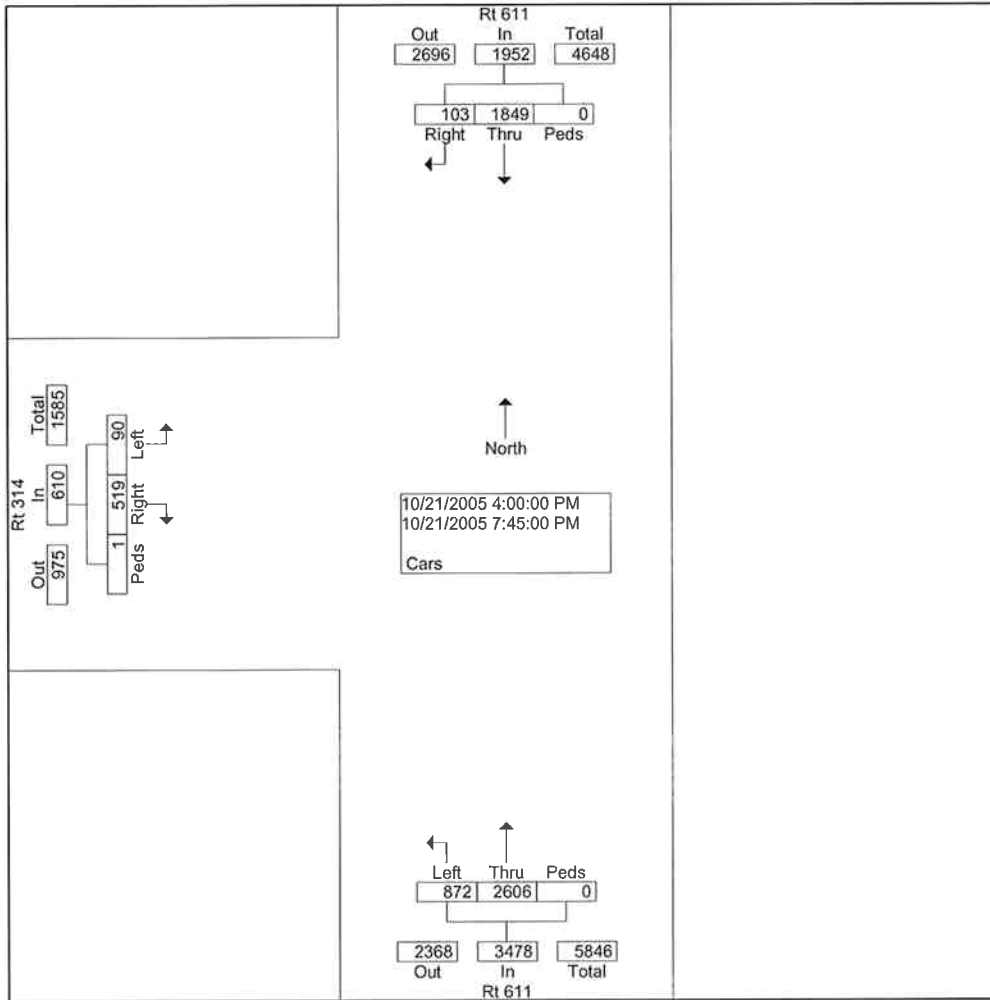
Site Code : 00000000

Start Date : 10/21/2005

Page No : 1

Groups Printed- Cars

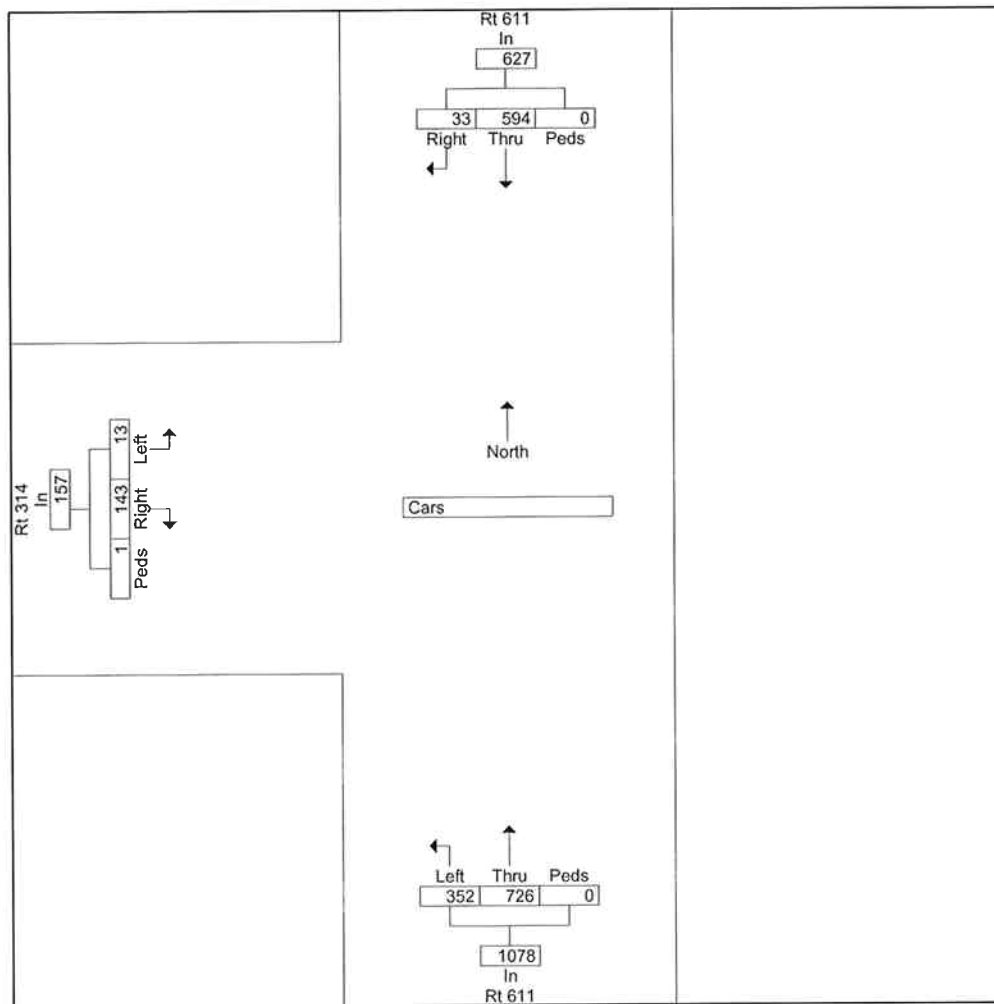
Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	12	136	0	0	148	0	171	63	0	234	44	0	5	1	50	432
04:15 PM	5	153	0	0	158	0	139	62	0	201	29	0	5	0	34	393
04:30 PM	11	145	0	0	156	0	184	82	0	266	28	0	2	0	30	452
04:45 PM	5	160	0	0	165	0	177	103	0	280	42	0	1	0	43	488
Total	33	594	0	0	627	0	671	310	0	981	143	0	13	1	157	1765
05:00 PM	4	133	0	0	137	0	188	67	0	255	37	0	2	0	39	431
05:15 PM	5	151	0	0	156	0	177	100	0	277	23	0	4	0	27	460
05:30 PM	8	153	0	0	161	0	181	59	0	240	26	0	8	0	34	435
05:45 PM	11	122	0	0	133	0	190	50	0	240	33	0	12	0	45	418
Total	28	559	0	0	587	0	736	276	0	1012	119	0	26	0	145	1744
06:00 PM	5	104	0	0	109	0	175	46	0	221	38	0	3	0	41	371
06:15 PM	4	84	0	0	88	0	165	43	0	208	60	0	2	0	62	358
06:30 PM	6	112	0	0	118	0	140	41	0	181	34	0	13	0	47	346
06:45 PM	7	93	0	0	100	0	177	30	0	207	49	0	14	0	63	370
Total	22	393	0	0	415	0	657	160	0	817	181	0	32	0	213	1445
07:00 PM	8	84	0	0	92	0	170	33	0	203	22	0	5	0	27	322
07:15 PM	1	84	0	0	85	0	98	33	0	131	18	0	4	0	22	238
07:30 PM	7	72	0	0	79	0	153	39	0	192	21	0	4	0	25	296
07:45 PM	4	63	0	0	67	0	121	21	0	142	15	0	6	0	21	230
Total	20	303	0	0	323	0	542	126	0	668	76	0	19	0	95	1086
Grand Total	103	1849	0	0	1952	0	2606	872	0	3478	519	0	90	1	610	6040
Apprch %	5.3	94.7	0.0	0.0		0.0	74.9	25.1	0.0		85.1	0.0	14.8	0.2		
Total %	1.7	30.6	0.0	0.0	32.3	0.0	43.1	14.4	0.0	57.6	8.6	0.0	1.5	0.0	10.1	



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~4  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

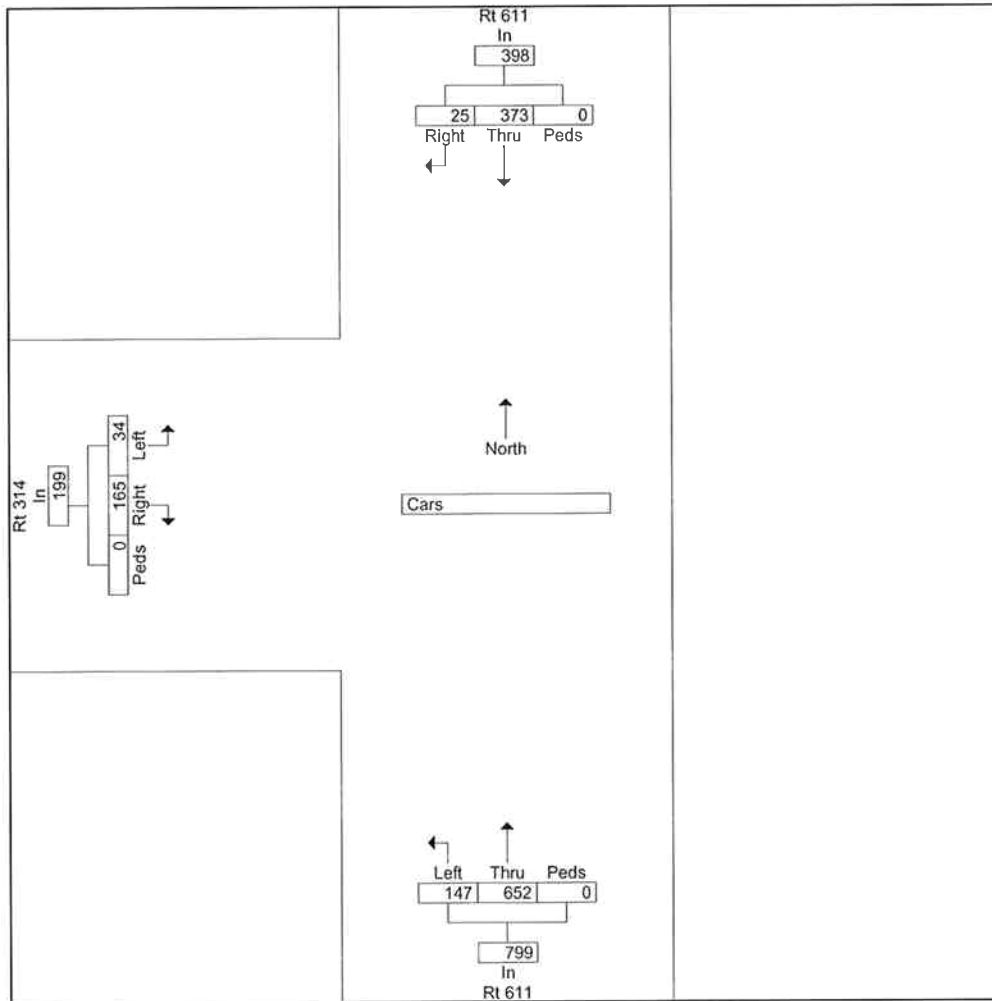
Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach	04:00 PM					04:30 PM					04:00 PM					
Volume	33	594	0	0	627	0	726	352	0	1078	143	0	13	1	157	
Percent	5.3	94.7	0.0	0.0		0.0	67.3	32.7	0.0		91.1	0.0	8.3	0.6		
High Int.	04:45 PM					04:45 PM					04:00 PM					
Volume	5	160	0	0	165	0	177	103	0	280	44	0	5	1	50	
Peak Factor	0.950					0.963					0.785					



Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~4  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1																
By Approach	06:15 PM					06:15 PM					06:15 PM					
Volume	25	373	0	0	398	0	652	147	0	799	165	0	34	0	199	
Percent	6.3	93.7	0.0	0.0		0.0	81.6	18.4	0.0		82.9	0.0	17.1	0.0		
High Int.	06:30 PM					06:15 PM					06:45 PM					
Volume	6	112	0	0	118	0	165	43	0	208	49	0	14	0	63	
Peak Factor	0.843					0.960					0.790					



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt 611 & Rt 314 (West)

Date: Saturday, October 22, 2005

Counter: wc

File Name : BG1022~4

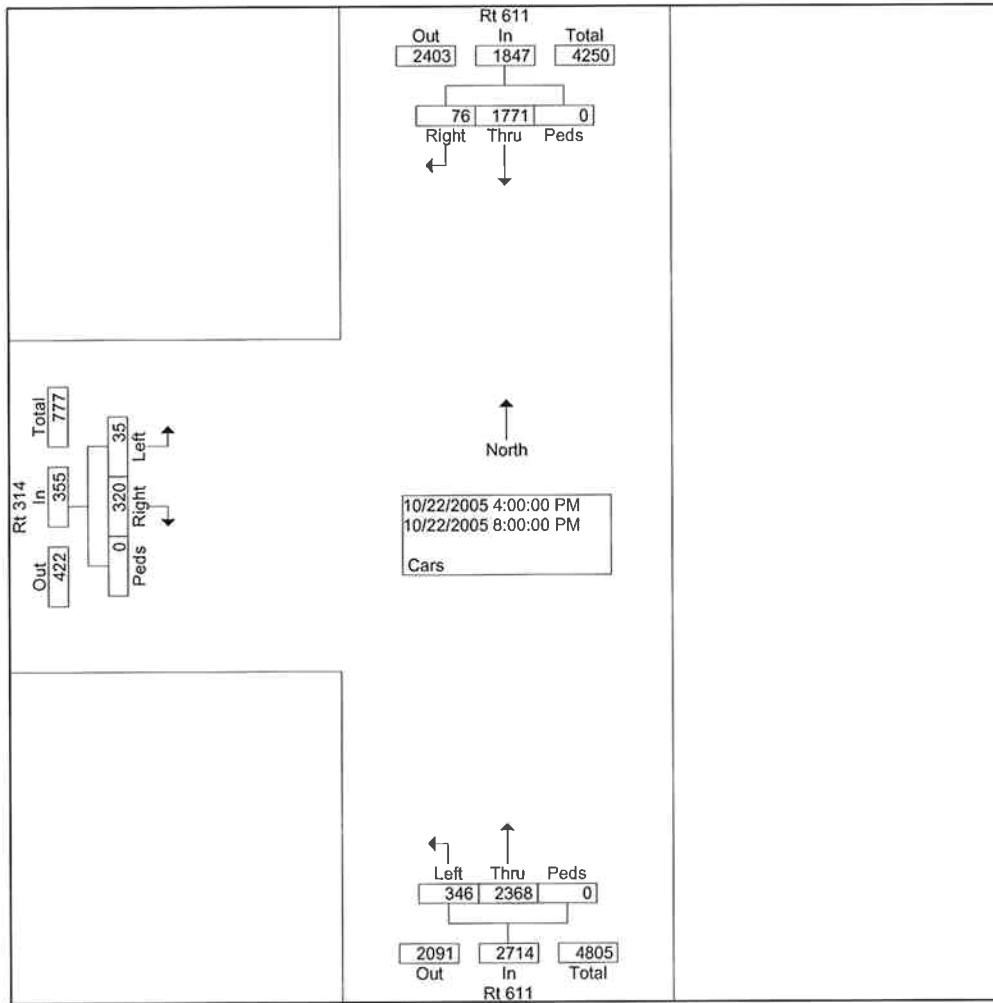
Site Code : 00000000

Start Date : 10/22/2005

Page No : 1

Groups Printed- Cars

Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	3	145	0	0	148	0	180	22	0	202	21	0	2	0	23	373
04:15 PM	6	136	0	0	142	0	200	16	0	216	24	0	0	0	24	382
04:30 PM	9	139	0	0	148	0	176	20	0	196	16	0	5	0	21	365
04:45 PM	3	143	0	0	146	0	151	20	0	171	23	0	4	0	27	344
Total	21	563	0	0	584	0	707	78	0	785	84	0	11	0	95	1464
05:00 PM	2	99	0	0	101	0	165	20	0	185	20	0	2	0	22	308
05:15 PM	5	122	0	0	127	0	168	23	0	191	19	0	3	0	22	340
05:30 PM	1	114	0	0	115	0	168	27	0	195	19	0	0	0	19	329
05:45 PM	2	114	0	0	116	0	129	23	0	152	22	0	3	0	25	293
Total	10	449	0	0	459	0	630	93	0	723	80	0	8	0	88	1270
06:00 PM	5	86	0	0	91	1	150	26	0	177	26	0	2	0	28	296
06:15 PM	10	106	0	0	116	0	156	23	0	179	22	1	2	0	25	320
06:30 PM	9	111	0	0	120	0	131	39	0	170	11	0	4	0	15	305
06:45 PM	3	75	0	0	78	0	117	25	0	142	16	0	0	0	16	236
Total	27	378	0	0	405	1	554	113	0	668	75	1	8	0	84	1157
07:00 PM	1	97	0	0	98	0	141	15	0	156	18	0	3	0	21	275
07:15 PM	2	100	0	0	102	0	122	24	0	146	16	0	3	0	19	267
07:30 PM	5	86	0	0	91	0	107	14	0	121	23	0	2	0	25	237
07:45 PM	10	98	0	0	108	0	107	9	0	116	24	0	0	0	24	248
Total	18	381	0	0	399	0	477	62	0	539	81	0	8	0	89	1027
*** BREAK ***																
Grand Total	76	1771	0	0	1847	1	2368	346	0	2715	320	1	35	0	356	4918
Apprch %	4.1	95.9	0.0	0.0		0.0	87.2	12.7	0.0		89.9	0.3	9.8	0.0		
Total %	1.5	36.0	0.0	0.0	37.6	0.0	48.1	7.0	0.0	55.2	6.5	0.0	0.7	0.0	7.2	

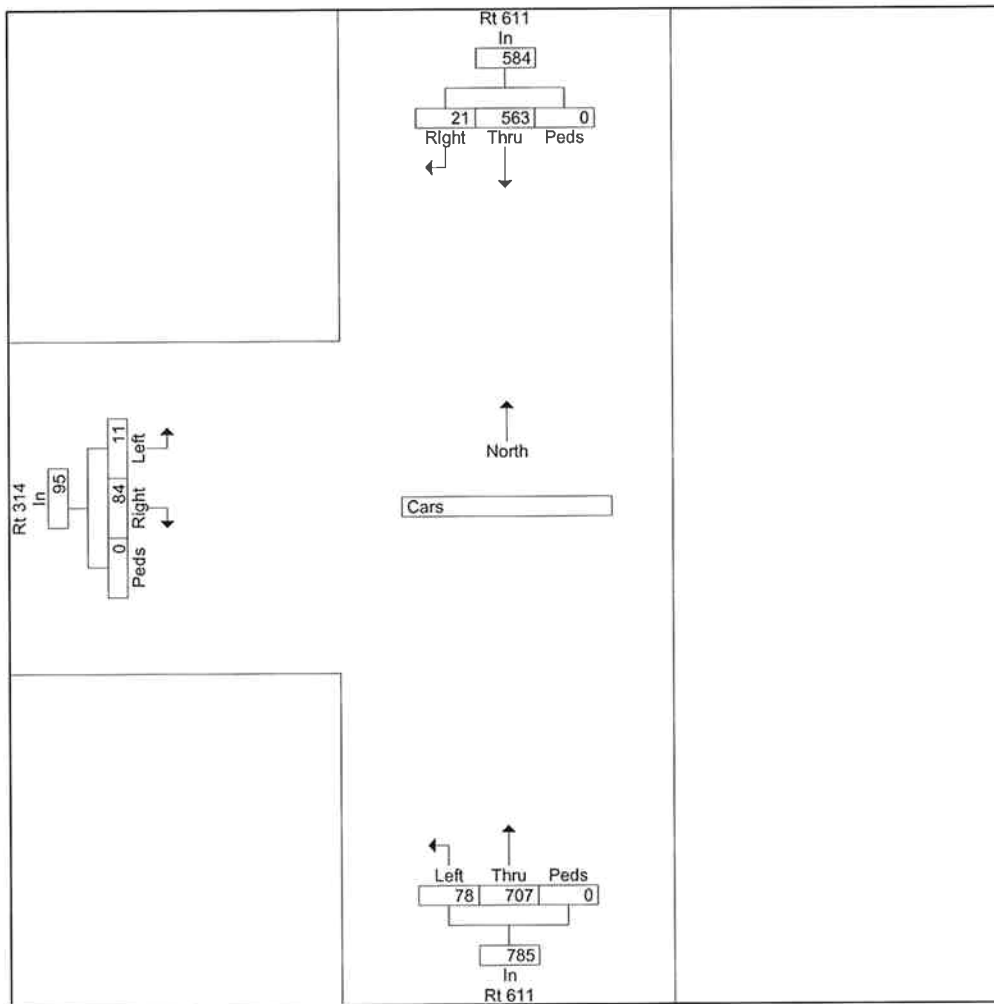




Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~4  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach	04:00 PM					04:00 PM					04:00 PM					
Volume	21	563	0	0	584	0	707	78	0	785	84	0	11	0	95	
Percent	3.6	96.4	0.0	0.0		0.0	90.1	9.9	0.0		88.4	0.0	11.6	0.0		
High Int.	04:00 PM					04:15 PM					04:45 PM					
Volume	3	145	0	0	148	0	200	16	0	216	23	0	4	0	27	
Peak Factor	0.986					0.909					0.880					



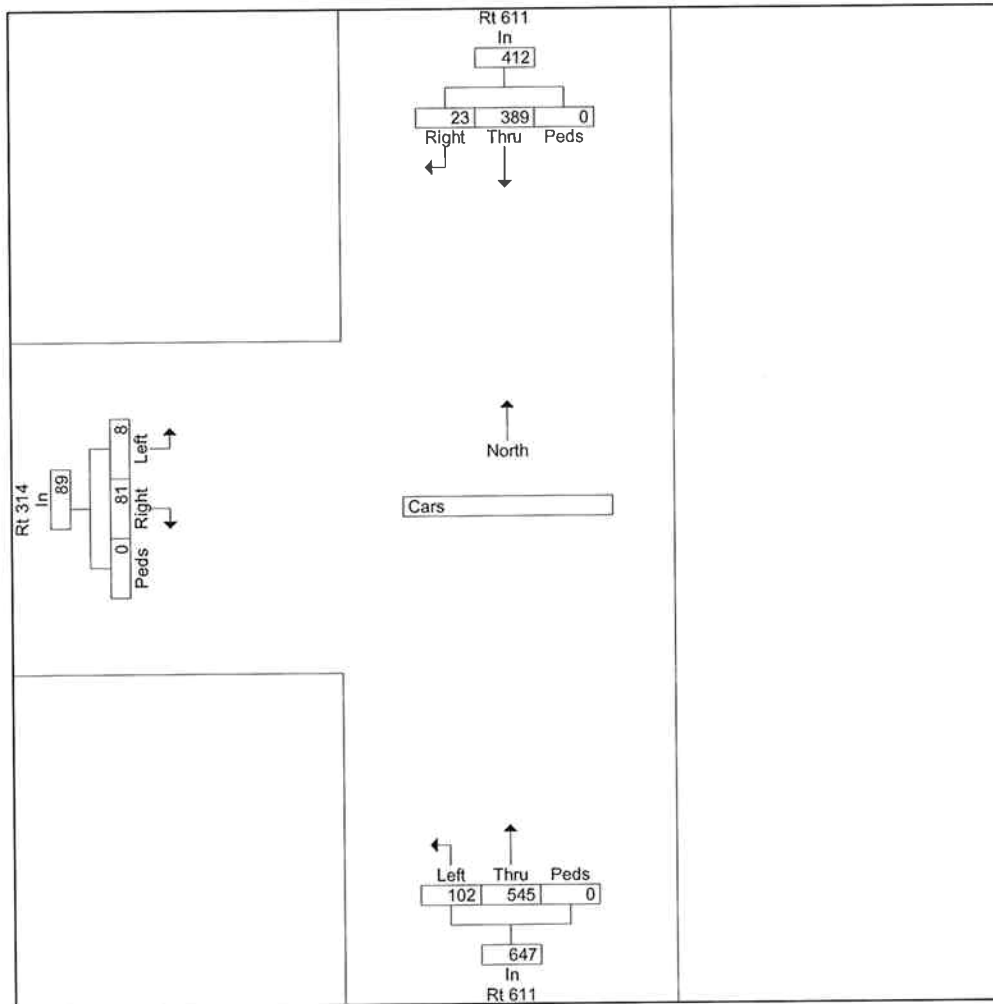
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 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1022~4  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	Rt 611 From North					Rt 611 From South					Rt 314 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour From 06:15 PM to 08:00 PM - Peak 1 of 1

By Approach	06:15 PM					06:15 PM					07:00 PM					
Volume	23	389	0	0	412	0	545	102	0	647	81	0	8	0	89	
Percent	5.6	94.4	0.0	0.0		0.0	84.2	15.8	0.0		91.0	0.0	9.0	0.0		
High Int.	06:30 PM					06:15 PM					07:30 PM					
Volume	9	111	0	0	120	0	156	23	0	179	23	0	2	0	25	
Peak Factor						0.858										0.890



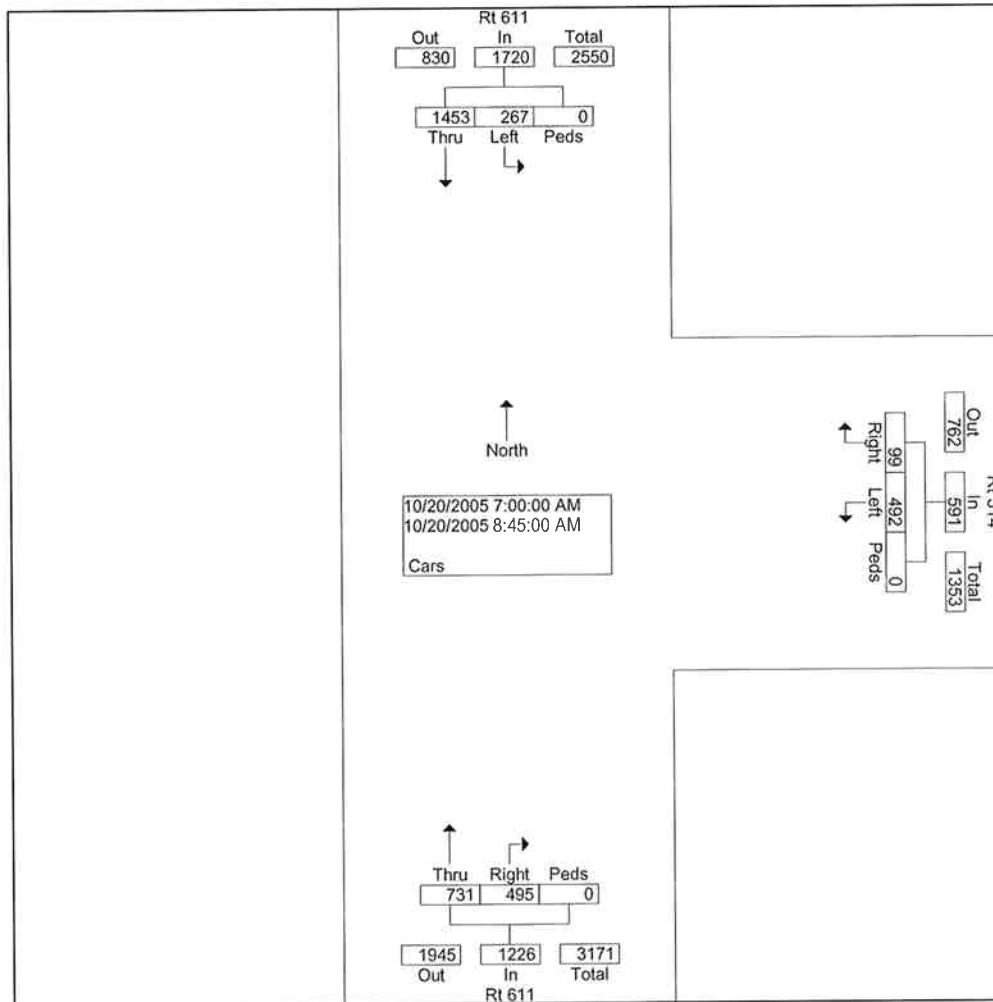
Location: Monroe County, PA  
 Intersection: Rt 611 /Rt 314(East)  
 Date: Thursday, October 20, 2005  
 Counter: Id

184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

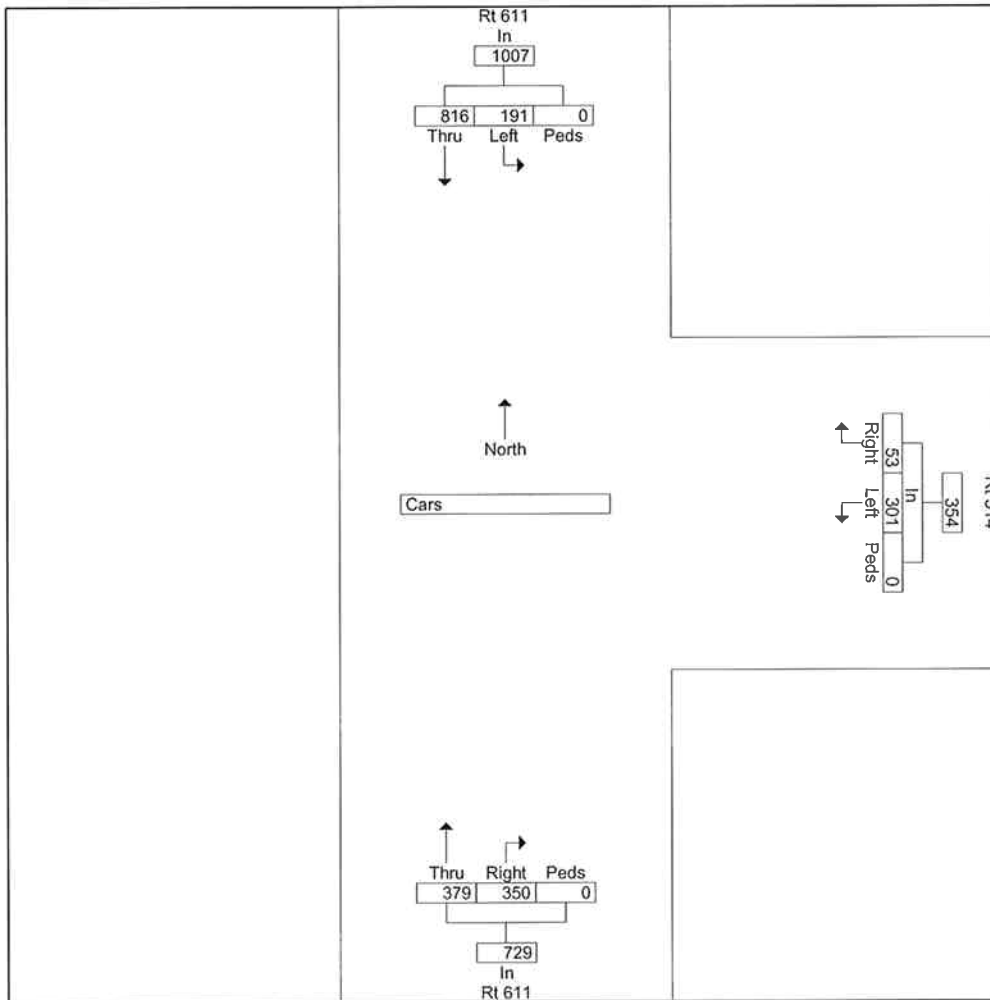
File Name : BG1020  
 Site Code : 000000  
 Start Date : 10/20/2005  
 Page No : 1

Groups Printed- Cars

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	153	47	0	200	7	0	33	0	40	96	101	0	0	197	4
07:15 AM	0	187	57	0	244	19	0	92	0	111	137	86	0	0	223	5
07:30 AM	0	236	50	0	286	13	0	78	0	91	67	82	0	0	149	5
07:45 AM	0	240	37	0	277	10	0	74	0	84	50	110	0	0	160	5
Total	0	816	191	0	1007	49	0	277	0	326	350	379	0	0	729	20
08:00 AM	0	177	17	0	194	11	0	57	0	68	36	95	0	0	131	3
08:15 AM	0	161	20	0	181	8	0	46	0	54	32	93	0	0	125	3
08:30 AM	0	151	22	0	173	13	0	57	0	70	37	70	0	0	107	3
08:45 AM	0	148	17	0	165	18	0	55	0	73	40	94	0	0	134	3
Total	0	637	76	0	713	50	0	215	0	265	145	352	0	0	497	14
Grand Total	0	1453	267	0	1720	99	0	492	0	591	495	731	0	0	1226	35
Apprch %	0.0	84.5	15.5	0.0		16.8	0.0	83.2	0.0		40.4	59.6	0.0	0.0		
Total %	0.0	41.1	7.5	0.0	48.6	2.8	0.0	13.9	0.0	16.7	14.0	20.7	0.0	0.0	34.7	



Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. To
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From	07:00 AM to 08:45 AM - Peak 1 of 1															
by Approach	07:00 AM															
Volume	0	816	191	0	1007	53	0	301	0	354	350	379	0	0	729	
Percent	0.0	81.0	19.0	0.0		15.0	0.0	85.0	0.0		48.0	52.0	0.0	0.0		
High Int.	07:30 AM															
Volume	0	236	50	0	286	19	0	92	0	111	137	86	0	0	223	
Peak Factor	0.880					0.797					0.817					



Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt 611 & Rt 314 (East)

Date: Friday, October 21, 2005

Counter: Id

File Name : BG1021~3

Site Code : 00000000

Start Date : 10/21/2005

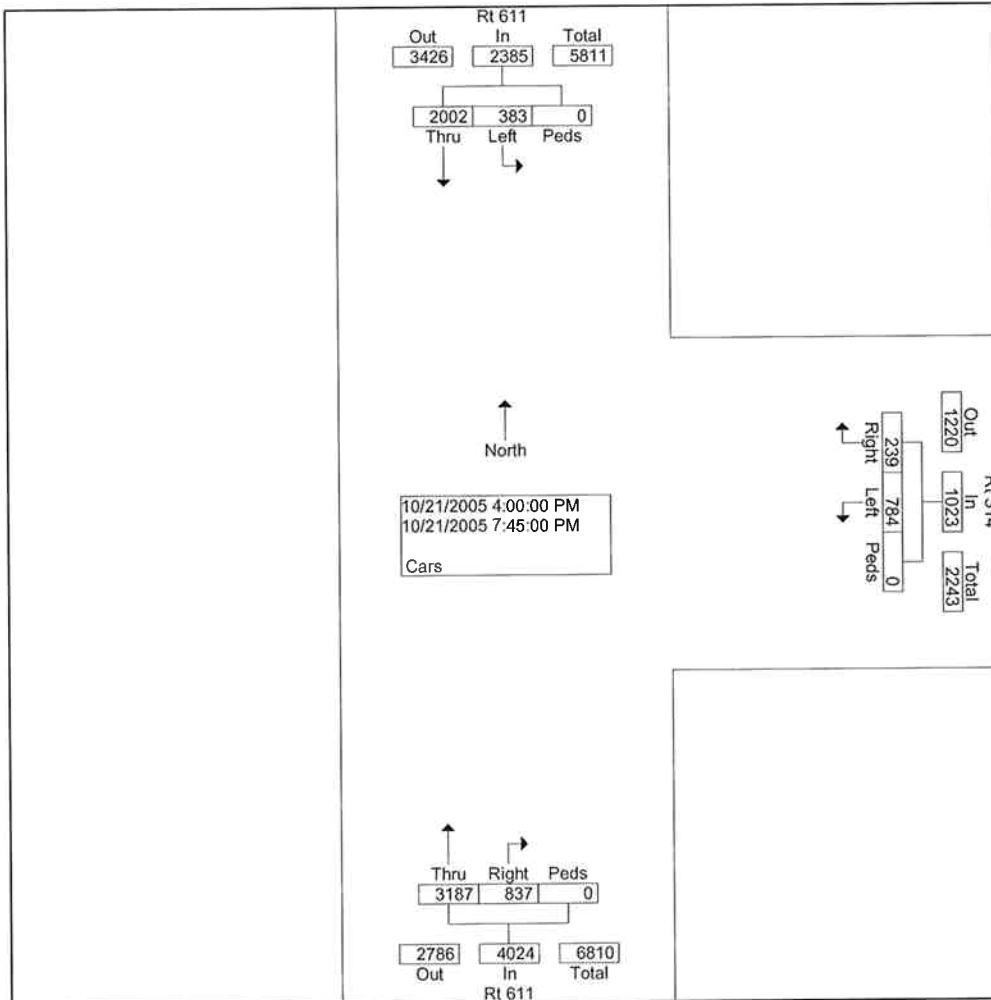
Page No : 1

Groups Printed- Cars

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	0	147	29	0	176	22	0	96	0	118	49	188	2	0	239	533
04:15 PM	0	166	17	0	183	22	0	75	0	97	57	185	3	0	245	525
04:30 PM	0	149	22	0	171	28	0	92	0	120	54	235	4	0	293	584
04:45 PM	0	184	23	0	207	26	0	69	0	95	50	255	2	0	307	609
Total	0	646	91	0	737	98	0	332	0	430	210	863	11	0	1084	2251
05:00 PM	0	155	23	0	178	23	0	58	0	81	67	236	0	0	303	562
05:15 PM	0	156	19	0	175	19	0	65	0	84	63	256	0	0	319	578
05:30 PM	0	159	15	0	174	13	0	58	0	71	48	220	2	0	270	515
05:45 PM	0	128	20	0	148	10	0	44	0	54	62	233	1	0	296	498
Total	0	598	77	0	675	65	0	225	0	290	240	945	3	0	1188	2153
06:00 PM	0	116	33	0	149	8	0	37	0	45	53	205	2	0	260	454
06:15 PM	0	120	37	0	157	11	0	29	0	40	59	183	2	0	244	441
06:30 PM	0	110	40	0	150	10	0	38	0	48	66	172	0	0	238	436
06:45 PM	0	95	35	0	130	9	0	28	0	37	58	186	2	0	246	413
Total	0	441	145	0	586	38	0	132	0	170	236	746	6	0	988	1744
07:00 PM	0	82	23	0	105	16	0	31	0	47	58	189	0	0	247	399
07:15 PM	0	86	20	0	106	7	0	22	0	29	44	130	0	0	174	309
07:30 PM	0	83	16	0	99	10	0	25	0	35	25	174	0	0	199	333
07:45 PM	0	66	11	0	77	5	0	17	0	22	24	140	0	0	164	263
Total	0	317	70	0	387	38	0	95	0	133	151	633	0	0	784	1304
Grand Total	0	2002	383	0	2385	239	0	784	0	1023	837	3187	20	0	4044	7452
Apprch %	0.0	83.9	16.1	0.0		23.4	0.0	76.6	0.0		20.7	78.8	0.5	0.0		
Total %	0.0	26.9	5.1	0.0	32.0	3.2	0.0	10.5	0.0	13.7	11.2	42.8	0.3	0.0	54.3	

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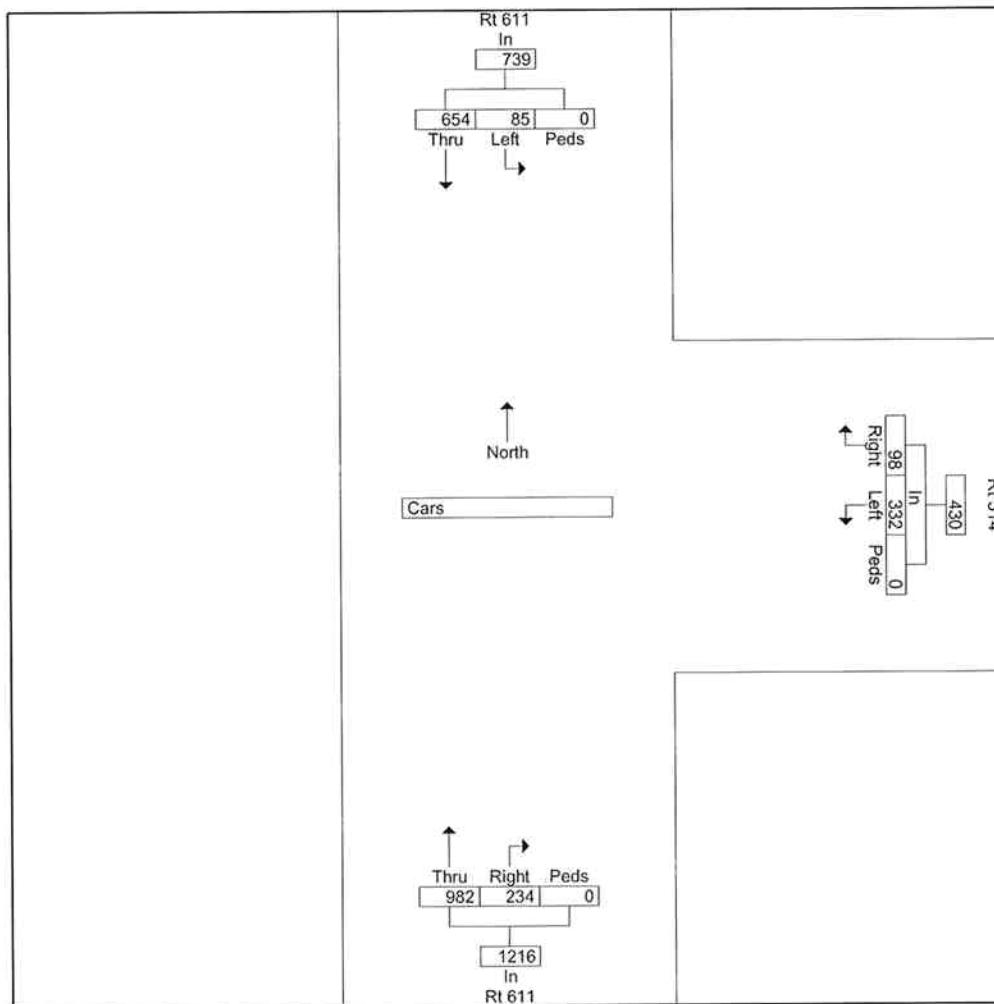
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 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 2



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 (610) 466-1469

File Name : BG1021~3  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 3

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach	04:15 PM					04:00 PM					04:30 PM					
Volume	0	654	85	0	739	98	0	332	0	430	234	982	6	0	1222	
Percent	0.0	88.5	11.5	0.0		22.8	0.0	77.2	0.0		19.1	80.4	0.5	0.0		
High Int.	04:45 PM					04:30 PM					05:15 PM					
Volume	0	184	23	0	207	28	0	92	0	120	63	256	0	0	319	
Peak Factor					0.893					0.896					0.958	



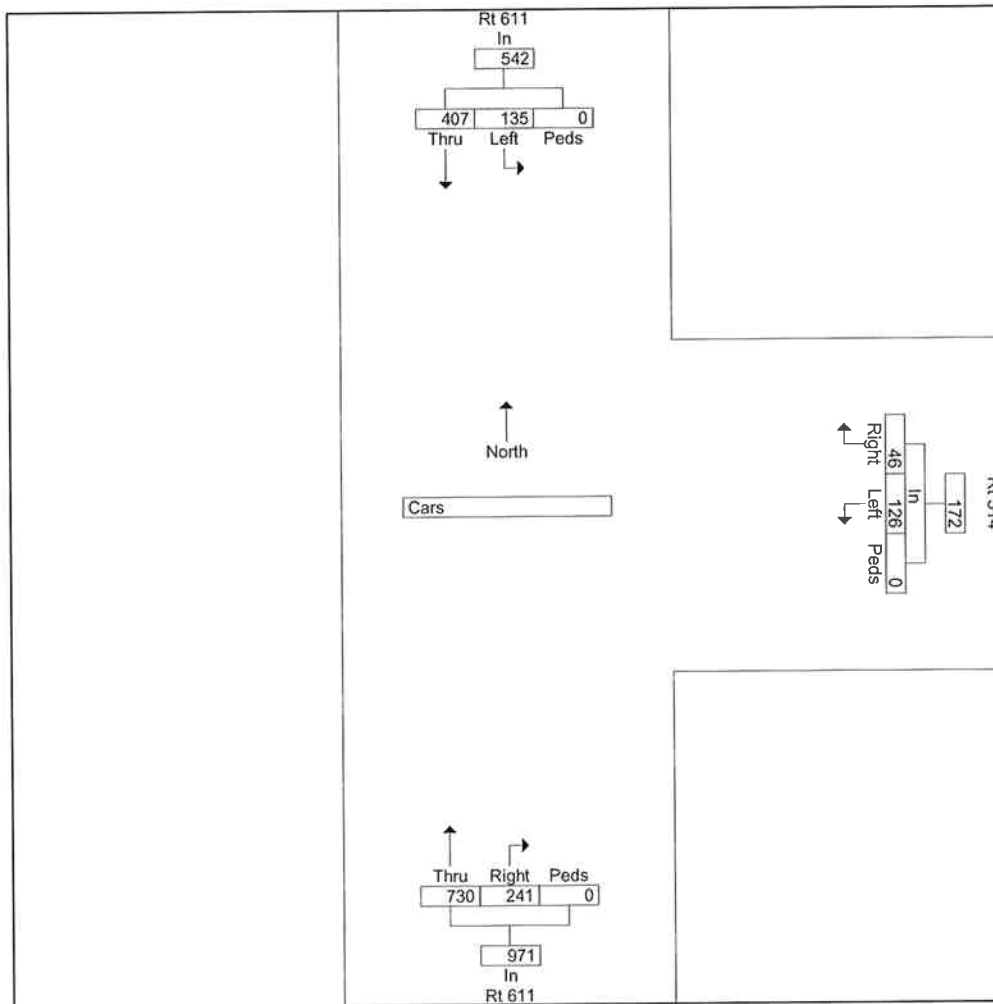
Tri-State Traffic Data, Inc.  
 184 Baker Road  
 Coatsville, PA 19320  
 (610) 466-1469

File Name : BG1021~3  
 Site Code : 00000000  
 Start Date : 10/21/2005  
 Page No : 4

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1

By Approach	06:15 PM					06:15 PM					06:15 PM					
Volume	0	407	135	0	542	46	0	126	0	172	241	730	4	0	975	
Percent	0.0	75.1	24.9	0.0		26.7	0.0	73.3	0.0		24.7	74.9	0.4	0.0		
High Int.	06:15 PM					06:30 PM					07:00 PM					
Volume	0	120	37	0	157	10	0	38	0	48	58	189	0	0	247	
Peak Factor	0.863					0.896					0.987					





Tri-State Traffic Data, Inc.

184 Baker Road

Coatsville, PA 19320

(610) 466-1469

Location: Monroe County, PA

Intersection: Rt 611 & Rt 314(East)

Date: Saturday, October 22, 2005

Counter: Id

File Name : BG1022~3

Site Code : 00000000

Start Date : 10/22/2005

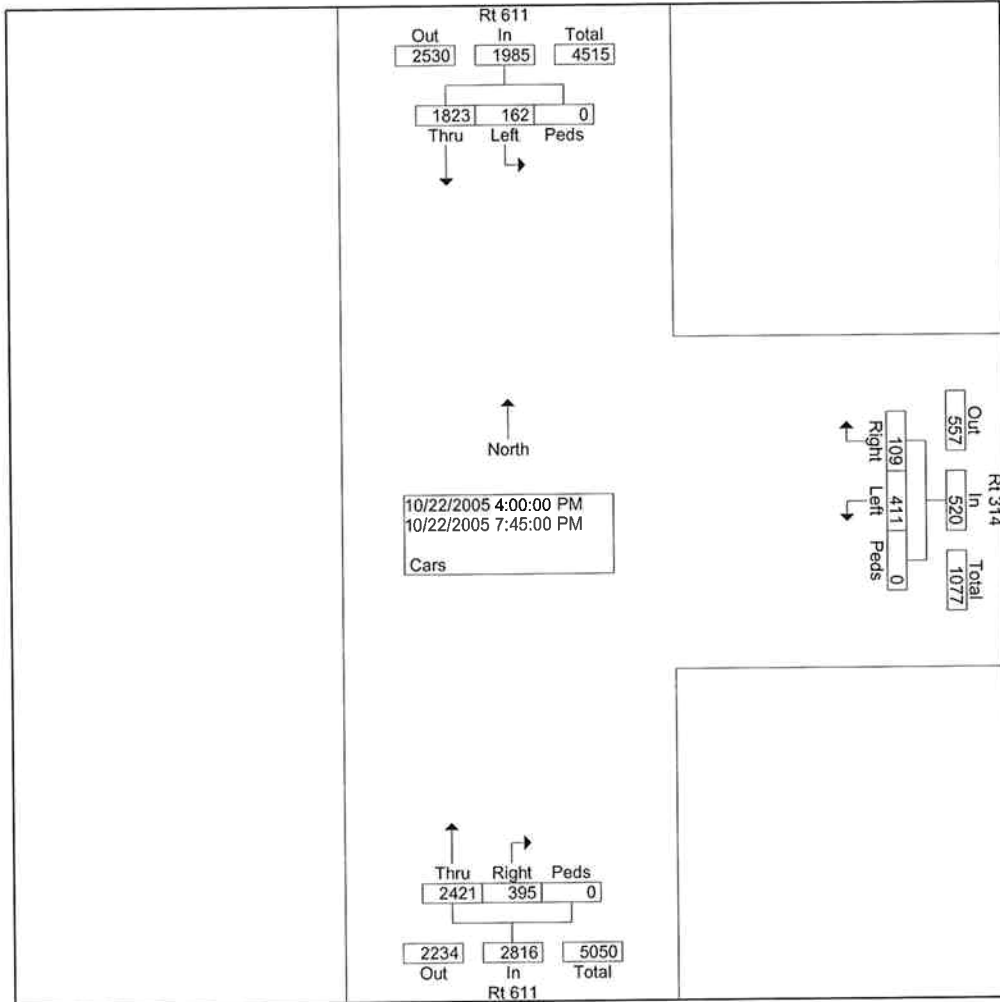
Page No : 1

Groups Printed- Cars

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	0	154	7	0	161	13	0	41	0	54	39	195	1	0	235	450
04:15 PM	0	132	13	0	145	7	0	38	0	45	21	193	1	0	215	405
04:30 PM	0	129	13	0	142	6	0	31	0	37	23	164	1	0	188	367
04:45 PM	0	135	10	0	145	4	0	29	0	33	34	163	2	0	199	377
Total	0	550	43	0	593	30	0	139	0	169	117	715	5	0	837	1599
05:00 PM	0	114	13	0	127	2	0	28	0	30	25	173	0	0	198	355
05:15 PM	0	123	8	0	131	9	0	28	0	37	31	171	0	0	202	370
05:30 PM	0	133	5	0	138	4	0	36	0	40	30	163	0	0	193	371
05:45 PM	0	125	9	0	134	6	0	23	0	29	23	139	1	0	163	326
Total	0	495	35	0	530	21	0	115	0	136	109	646	1	0	756	1422
06:00 PM	0	97	12	0	109	7	0	31	0	38	16	166	0	0	182	329
06:15 PM	0	104	10	0	114	6	0	17	0	23	33	164	0	0	197	334
06:30 PM	0	107	11	0	118	14	0	13	0	27	26	135	2	0	163	308
06:45 PM	0	85	0	0	85	7	0	16	0	23	20	131	0	0	151	259
Total	0	393	33	0	426	34	0	77	0	111	95	596	2	0	693	1230
07:00 PM	0	100	16	0	116	7	0	24	0	31	16	135	0	0	151	298
07:15 PM	0	101	10	0	111	3	0	25	0	28	24	129	0	0	153	292
07:30 PM	0	88	14	0	102	8	0	15	0	23	19	104	2	0	125	250
07:45 PM	0	96	11	0	107	6	0	16	0	22	15	96	4	0	115	244
Total	0	385	51	0	436	24	0	80	0	104	74	464	6	0	544	1084
Grand Total	0	1823	162	0	1985	109	0	411	0	520	395	2421	14	0	2830	5335
Apprch %	0.0	91.8	8.2	0.0		21.0	0.0	79.0	0.0		14.0	85.5	0.5	0.0		
Total %	0.0	34.2	3.0	0.0	37.2	2.0	0.0	7.7	0.0	9.7	7.4	45.4	0.3	0.0	53.0	

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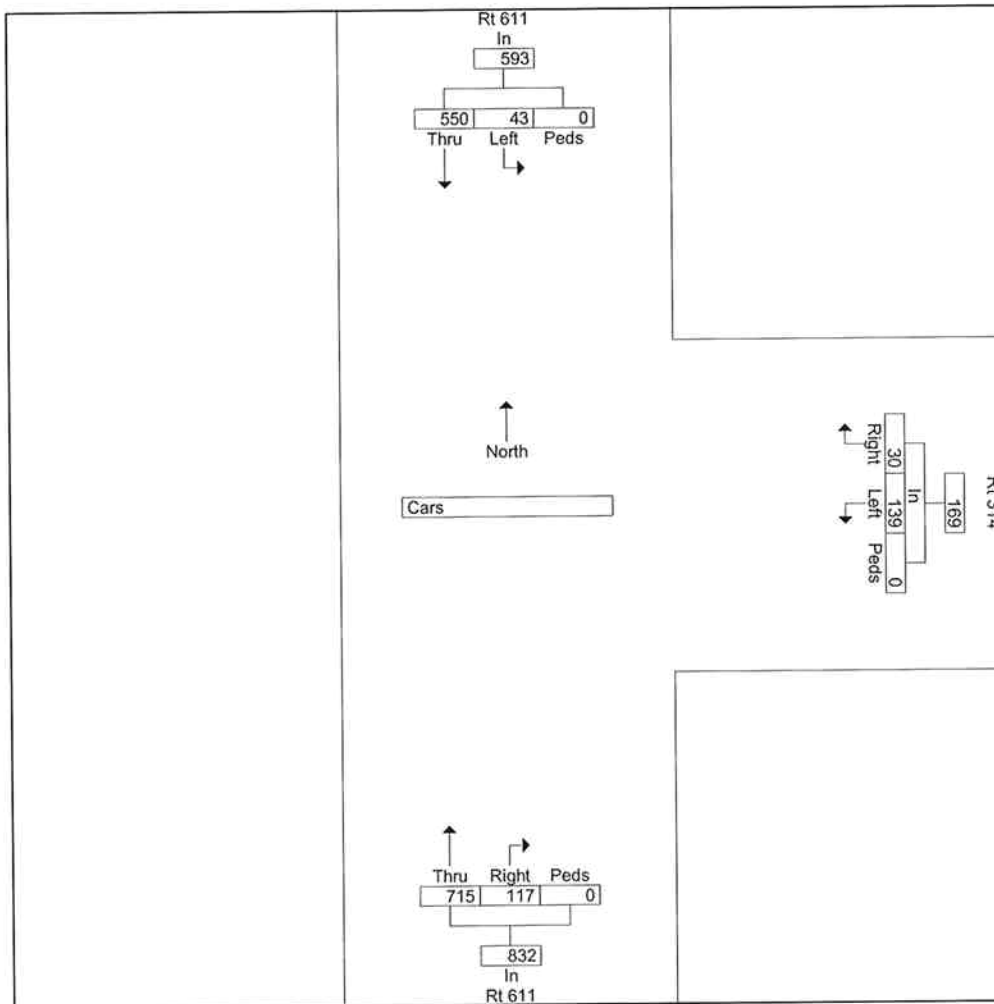
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 Page No : 2



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File Name : BG1022~3  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 3

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour From 04:00 PM to 06:00 PM - Peak 1 of 1																
By Approach	04:00 PM					04:00 PM					04:00 PM					
Volume	0	550	43	0	593	30	0	139	0	169	117	715	5	0	837	
Percent	0.0	92.7	7.3	0.0		17.8	0.0	82.2	0.0		14.0	85.4	0.6	0.0		
High Int.	04:00 PM					04:00 PM					04:00 PM					
Volume	0	154	7	0	161	13	0	41	0	54	39	195	1	0	235	
Peak Factor					0.921					0.782					0.890	



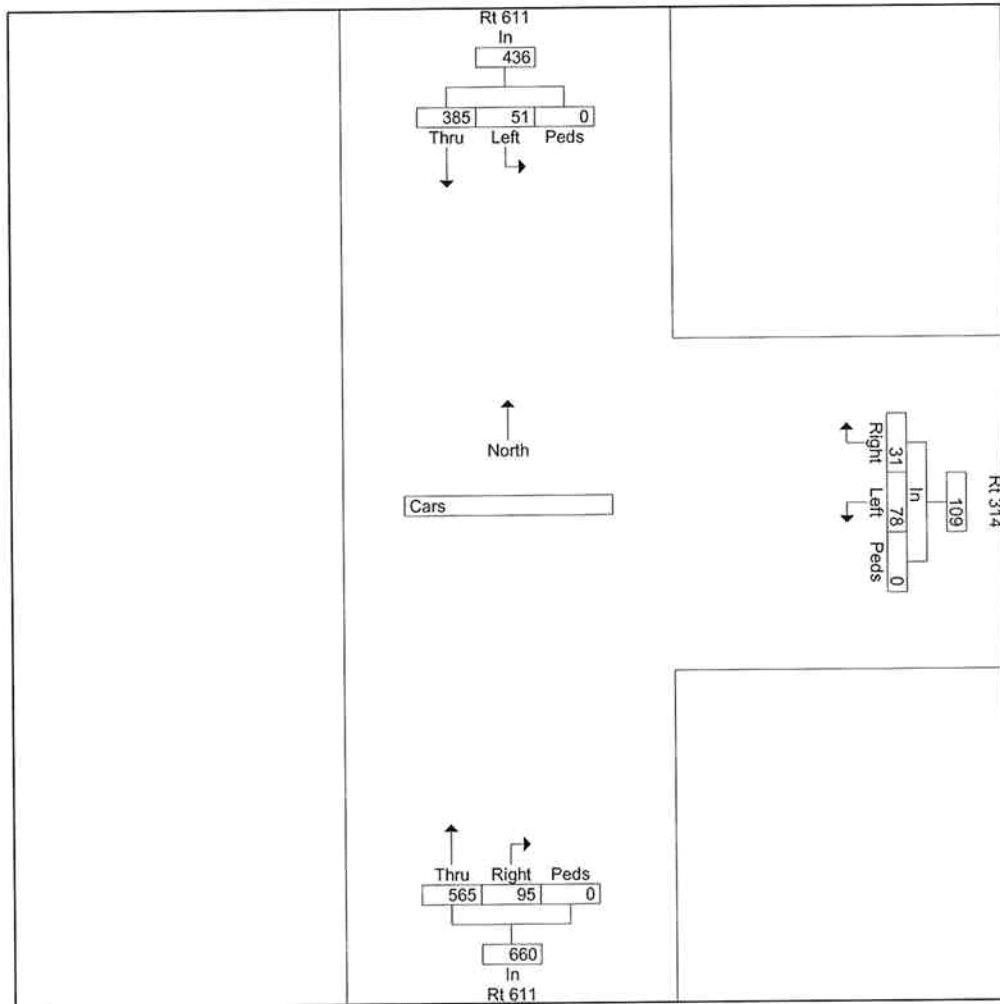
Tri-State Traffic Data, Inc.  
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 (610) 466-1469

File Name : BG1022~3  
 Site Code : 00000000  
 Start Date : 10/22/2005  
 Page No : 4

Start Time	Rt 611 From North					Rt 314 From East					Rt 611 From South					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour From 06:15 PM to 07:45 PM - Peak 1 of 1

By Approach	07:00 PM					06:30 PM					06:15 PM				
Volume	0	385	51	0	436	31	0	78	0	109	95	565	2	0	662
Percent	0.0	88.3	11.7	0.0		28.4	0.0	71.6	0.0		14.4	85.3	0.3	0.0	
High Int.	07:00 PM					07:00 PM					06:15 PM				
Volume	0	100	16	0	116	7	0	24	0	31	33	164	0	0	197
Peak Factor	0.940					0.879					0.840				



***TRAFFIC IMPACT STUDY***

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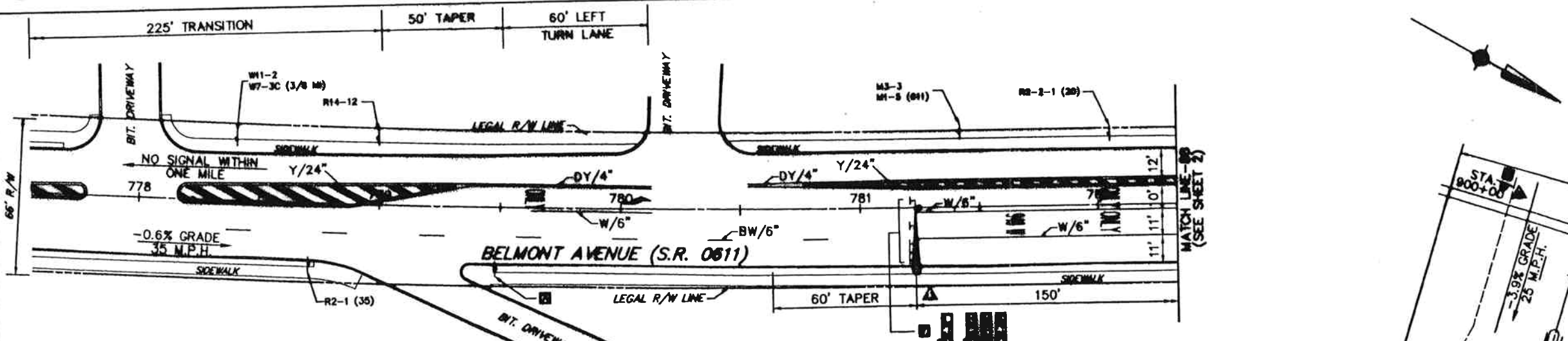
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**APPENDIX C**

**Planned Roadway Improvement**



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
5-0	MONROE	0611	123	4 OF 4
MOUNT POCONO BOROUGH				
PERMIT NO. 45-403-1		SHEET 3 OF 3		
DATE ISSUED 11-23-88		DATE REVISED		



**EMERGENCY PRE-EMPTION PHASING**

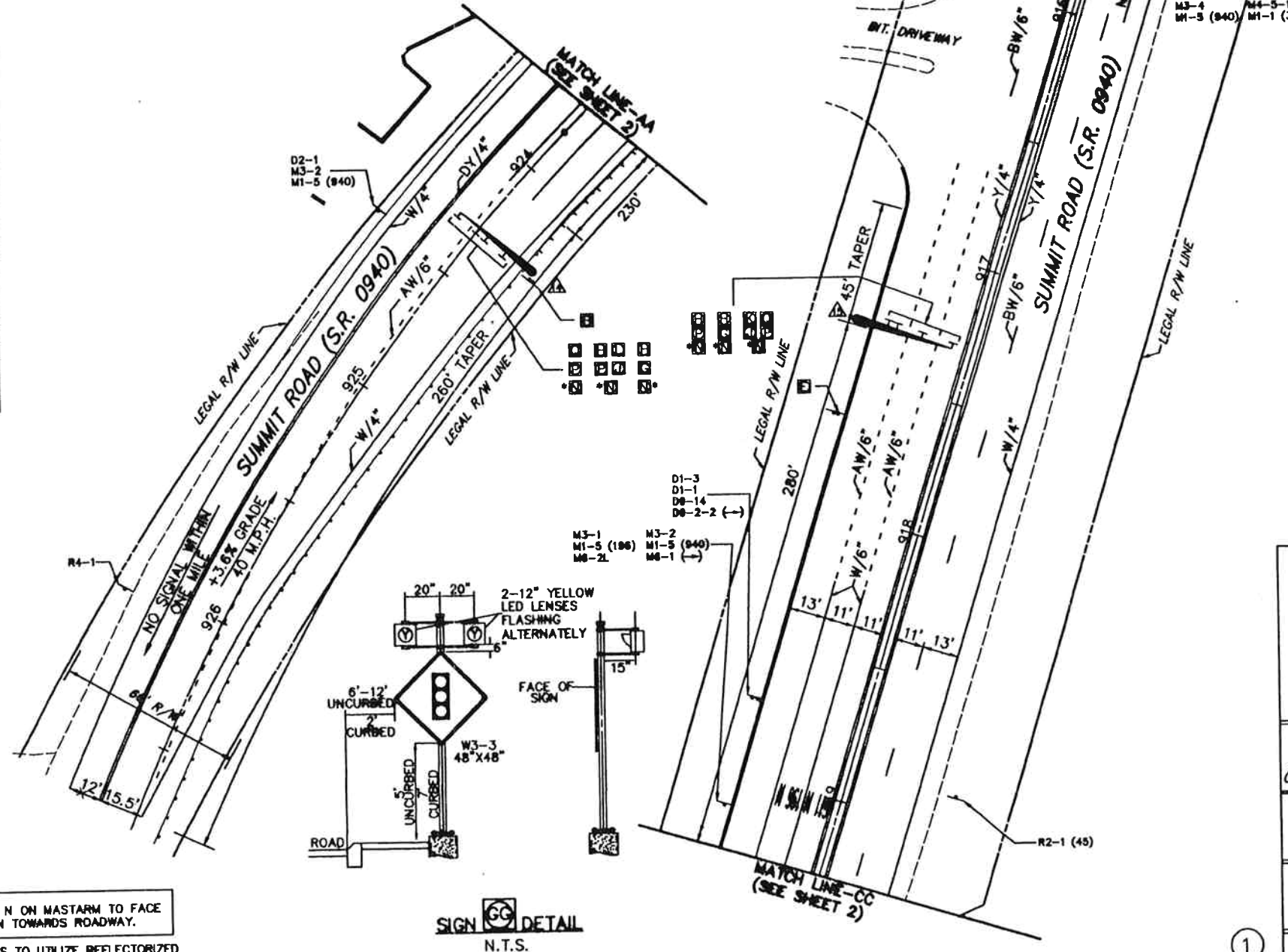
SIGNALS	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6
	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS	INTERVALS
1-1	Y	Y	Y	Y	Y	Y
1-2	Y	Y	Y	Y	Y	Y
1-3	Y	Y	Y	Y	Y	Y
1-4	Y	Y	Y	Y	Y	Y
1-5	Y	Y	Y	Y	Y	Y
1-6	Y	Y	Y	Y	Y	Y
1-7	Y	Y	Y	Y	Y	Y
1-8	Y	Y	Y	Y	Y	Y
1-9	Y	Y	Y	Y	Y	Y
1-10	Y	Y	Y	Y	Y	Y
1-11	Y	Y	Y	Y	Y	Y
1-12	Y	Y	Y	Y	Y	Y
1-13	Y	Y	Y	Y	Y	Y
1-14	Y	Y	Y	Y	Y	Y
1-15	Y	Y	Y	Y	Y	Y
1-16	Y	Y	Y	Y	Y	Y
1-17	Y	Y	Y	Y	Y	Y
1-18	Y	Y	Y	Y	Y	Y
1-19	Y	Y	Y	Y	Y	Y
1-20	Y	Y	Y	Y	Y	Y
1-21	Y	Y	Y	Y	Y	Y
1-22	Y	Y	Y	Y	Y	Y
1-23	Y	Y	Y	Y	Y	Y
1-24	Y	Y	Y	Y	Y	Y
1-25	Y	Y	Y	Y	Y	Y
1-26	Y	Y	Y	Y	Y	Y
1-27	Y	Y	Y	Y	Y	Y
1-28	Y	Y	Y	Y	Y	Y
1-29	Y	Y	Y	Y	Y	Y
1-30	Y	Y	Y	Y	Y	Y
1-31	Y	Y	Y	Y	Y	Y
1-32	Y	Y	Y	Y	Y	Y
1-33	Y	Y	Y	Y	Y	Y
1-34	Y	Y	Y	Y	Y	Y
1-35	Y	Y	Y	Y	Y	Y
1-36	Y	Y	Y	Y	Y	Y
1-37	Y	Y	Y	Y	Y	Y
1-38	Y	Y	Y	Y	Y	Y
1-39	Y	Y	Y	Y	Y	Y
1-40	Y	Y	Y	Y	Y	Y

@G/Y IF FOLLOWED BY NORMAL OPERATION  
 @G IF FOLLOWED BY NORMAL OPERATION  
 \*FOR DURATION OF PRE-EMPTION

**SIGN TABULATION**

PLAN SYMBOL	SERIES NUMBER	SIZE	QUANTITY	REMARKS
	R3-7L	30"X30"	2	LEFT LANE MUST TURN LEFT
	R3-BBLSR	48"X30"	1	LANE USE CONTROL (THREE LANES)
	R3-BBLSR	48"X30"	1	LANE USE CONTROL (THREE LANES)
	R3-BBLSR	48"X30"	1	LANE USE CONTROL (THREE LANES)
	R3-BBLSR	48"X30"	1	LANE USE CONTROL (THREE LANES)
	R3-BBLR	48"X30"	1	LEFT TURN SIGN
	R3-5L	30"X36"	1	PA ROUTE MARKER (196)
	M1-5	30"X24"	5	NORTH MARKER
	M3-1	30"X15"	9	PA ROUTE MARKER (940)
	M1-5	30"X24"	7	EAST MARKER
	M3-2	30"X15"	3	WEST MARKER
	M3-4	30"X15"	4	STRAIGHT THROUGH MARKER
	M6-3	30"X18"	13	ADVANCE 90 DEGREE RIGHT TURN MARKER
	M5-1R	21"X15"	2	PA ROUTE MARKER (611)
	M1-5	30"X24"	3	SOUTH MARKER
	M3-3	30"X15"	3	ADVANCE 90 DEGREE LEFT TURN MARKER
	M5-1L	21"X15"	1	LANE USE CONTROL (TWO LANES)
	R3-8ASR	30"X30"	1	ADVANCE 45 DEGREE RIGHT TURN MARKER
	M5-2R	21"X15"	1	KEEP RIGHT
	R4-7	24"X30"	5	HAZARD MARKER
	W16-1	18"X18"	7	NO PEDESTRIAN CROSSING
	R9-3A	18"X18"	7	EDUCATIONAL PUSH BUTTON FOR WALK
	R10-3BL	9"X12"	4	EDUCATIONAL PUSH BUTTON FOR WALK
	R10-3BR	9"X12"	6	LEFT TURN YIELD ON GREEN
	R10-12	30"X36"	3	RIGHT TURN SIGNAL
	R10-10R	30"X36"	5	OPPOSING TRAFFIC HAS EXTENDED GREEN
	R10-20R	30"X36"	2	SIGNAL AHEAD (SYMBOL)
	W3-3	48"X48"	2	

\* SIGN N ON MASTARM TO FACE DOWN TOWARDS ROADWAY.  
 ALL SIGNS TO UTILIZE REFLECTORIZED TYPE III OR TYPE VII SHEETING.



**EMERGENCY PRE-EMPTION NOTES:**  
 CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE WESTBOUND APPROACH OF SR 0940 (SUMMIT ROAD), EASTBOUND APPROACH OF PRIVATE DRIVEWAY, EASTBOUND APPROACH OF SR 0940 (SUMMIT ROAD), SOUTHBOUND APPROACH OF SR 0611 (BELMONT AVENUE), SOUTHBOUND APPROACH OF SR 0196 (STERLING ROAD) AND THE NORTHBOUND APPROACH OF SR 0611 (BELMONT AVENUE) WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION.

THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS, EXCEPT THE GREEN INDICATIONS FOR THE PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE, FOLLOWED BY SELECTIVE CLEARANCES DEPENDENT UPON THE PHASE IN WHICH THE PRE-EMPTION OCCURS. THE GREEN INDICATIONS FOR THE PRE-EMPTED PHASE SHALL REMAIN GREEN FOR THE DURATION OF SIGNAL PRE-EMPTION AND RED INDICATIONS DISPLAYED FOR ALL OTHER PHASES.

THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.

IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.

UPON COMPLETION OF PRE-EMPTION PHASE 1 OR 6, IN RETURNING TO NORMAL OPERATION, NORMAL PHASE 1 INTERVAL 1 SHALL FOLLOW.

UPON COMPLETION OF PRE-EMPTION PHASES 2, 3, 4 OR 5 IN RETURNING TO NORMAL OPERATION, NORMAL PHASE 1 INTERVAL 1 SHALL FOLLOW.

IF THE PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION AND THERE IS NEED TO ALLOW PRE-EMPTION BY EMERGENCY VEHICLES FROM NEARBY MUNICIPALITIES WITH DIFFERENT EMITTERS, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON TO GIVE UNSODDED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

County: MONROE	
Municipality: BOROUGH OF MOUNT POCONO	
Intersection: SR 0611 (BELMONT AVE) SR 0940 (SUMMIT RD), PRIVATE DRIVEWAY & SR 0196 (STERLING RD)	
Reviewed: <i>[Signature]</i> Municipal Official	Date: 10/24/05
Reviewed:	
District Traffic Signals Div.	Date
Recommended:	
District Traffic Engineer	Date
Scale:	25 0 25 50

***TRAFFIC IMPACT STUDY***

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**APPENDIX D**

**Trip Generation**



# Trip Generation Characteristics of Small to Medium Sized Casinos

Michael Trueblood, Tara Gude

## OVERVIEW

This paper focuses on trip generation for small to medium sized casinos that are not part of a cluster of casinos. The data collection for this paper included three casinos located in Council Bluffs, Iowa. Two of the casinos are riverboat casinos and are located along the Missouri River, while the other casino includes an existing dog racetrack that later added slot machines.

In addition to the casinos located in Council Bluffs, the calculated trip generation rates were compared to rates included in a March 1998 ITE Journal article entitled *Gaming Casino Traffic*. The article calculated trip generation rates for two casinos in the St. Louis metropolitan area, the Casino Queen and the St. Charles Casino.

There is not an overwhelming amount of trip generation information available for casinos located outside of the typical Las Vegas or Atlantic City stereotype. The trip generation characteristics of casinos found in large clusters, like those in Las Vegas for example, are not similar to the casinos that will be covered in this article. For comparison purposes the MGM Grand Casino in Las Vegas has over 5,000 hotel rooms with over 3,500 slot machines, while the Treasure Island Casino has over 2,900 hotel rooms with over 2,000 slot machines. The trip generation characteristics of these casinos are quite different than the five covered in this paper due to their immense size and popularity. Another reason these casinos have different trip generation characteristics is because they are accessible by foot. In Las Vegas people tend to walk to and from the casinos or drive to one and then walk to several others throughout the course of a day.

It should be noted that each state has different rules and regulations that govern the actual type of establishment that can be used for gambling. Recent regulations have changed or have been modified in order to allow gambling facilities to be established beyond the typical riverboat casinos. Examples of these casinos are those operated by Indian Tribes. There are several casinos operated by Indian Tribes across the country. These casinos range in size, but they are good examples of the types of casinos this paper addresses.

## LOCATION OF CASINOS

This section will provide a brief overview of the location of the three Council Bluffs casinos and the two casinos located in the St. Louis metropolitan area. The casino locations are shown in Figure 1. The three casinos in Council Bluffs, Iowa are located near the Missouri River in the Omaha metropolitan area. The Ameristar Casino and Harvey's Casino are located along the river within one mile of each other in the northwest quadrant of the I-29/I-80 interchange. Bluffs Run Casino is located about two miles east of these casinos along I-80. For comparison purposes to other casino locations, the 1998 average daily traffic (ADT) along I-29 was 40,500 vehicles, while the 1998 ADT along I-80 was 67,400 vehicles. The estimated 1999 population is 1,040,000 people within a 50-mile radius of the casinos.

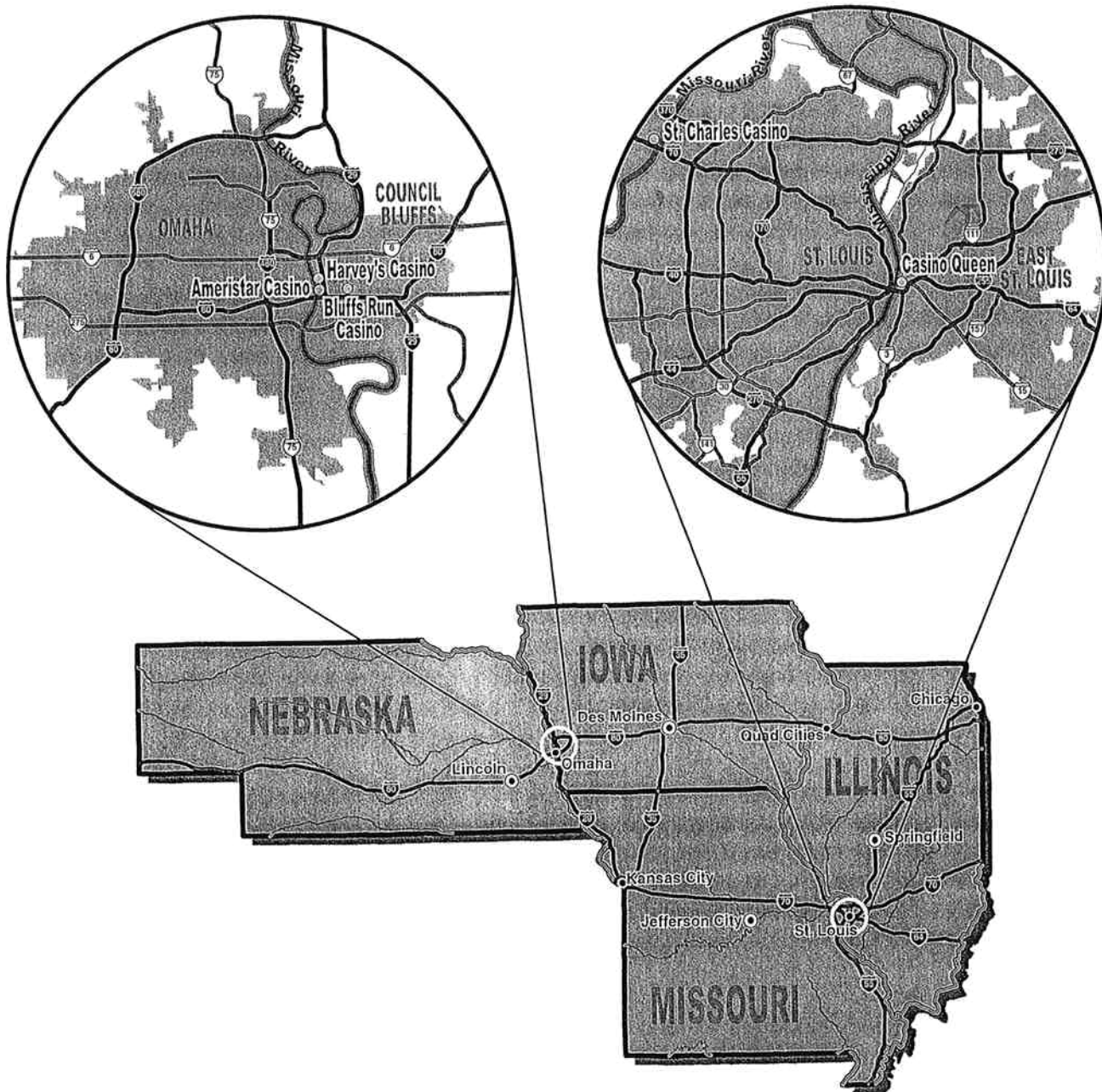


Figure 1 – Casino Location Map

The two St. Louis area casinos are also depicted in Figure 1. The St. Charles Casino is located along the Missouri River immediately north of I-70/Missouri River junction and about five miles to the west of I-270/I-70 junction in the City of St. Charles. The 1998 ADT along I-70 was 188,000 vehicles. The Casino Queen is located along the Mississippi River immediately east of the Gateway Arch and immediately north of the I-70/I-64/I-55 junction in the City of East St. Louis, Illinois. The ADT of these three interstates are 117,300 vehicles. The estimated 1999 population is 2,637,000 people within a 50-mile radius of the St. Louis area casinos.

### GAMING REVENUES OF STUDY CASINOS

This section discusses the gaming revenues of the tri-state region where the five casinos presented in this paper are located. Between the years 1994-1999, St. Charles Casino had the second highest attendance of the eleven riverboat casinos within the state of Missouri. During the fiscal year 2000 the eleven riverboat casinos made over \$1.0 billion in adjusted gross revenues (AGRs). In Illinois, the nine riverboat casinos made over \$1.66 billion AGRs in 2000, with the Casino Queen ranked fifth out of the nine riverboats. In Iowa, Harvey's Casino and Ameristar Casino ranked one and two of out ten casinos in AGRs, respectively. The ten casinos in Iowa combined for over \$575 million in AGRs. Casinos within the State of Iowa that also have pari-mutuel wagering are accounted for separately in terms of their AGRs. Bluffs Run Casino was ranked two out of three casinos in AGRs. The three racetrack casinos, as they are called in Iowa, combined for over \$300 million in AGRs in 2000.

### TRIP GENERATION CHARACTERISTICS OF STUDY CASINOS

Most of the available information concerning trip generation of casinos is related to large casinos or clusters of several casinos, such as those in Las Vegas. In order to determine the trip generation characteristics of small to medium sized casinos, HDR collected traffic information at three casinos in Council Bluffs, Iowa. Once the trip generation rates were computed, they were compared to trip generation rates of two St. Louis area casinos documented in a March 1998 issue of the ITE Journal.

Table 1 documents the five casinos' characteristics. It should be noted that the information for the Council Bluffs casinos is for the year 2000, while the information for the St. Louis casinos was collected in 1998.

**Table 1 – General Casino Information**

Amenities	Council Bluffs, Iowa			St. Louis Metro Area	
	Harvey's	Ameristar	Bluffs Run	St. Charles	Casino Queen
Slots	1169	1446	1479	1847	1020
Total Tables	53	51	0	90	51
Gaming sq. ft.	28,250	38,000	34,280	50,000	27,500
Hotel Rooms	251	356	0	<i>Not Applicable</i>	<i>Not Applicable</i>
Employees	1257	1329	1046	<i>Not Available</i>	1079
Pari-mutuel Wagering	No	No	Yes	No	No
Convention Center (seats)	900	170	No	<i>Not Available</i>	<i>Not Available</i>

The data collection for the Council Bluffs casinos was conducted during the following times:

- Ameristar – Saturday, July 15<sup>th</sup> to Tuesday, July 25<sup>th</sup>, 2000.
- Harvey's – Thursday, July 20<sup>th</sup> to Sunday, July 30<sup>th</sup>, 2000.
- Bluffs Run – Wednesday, July 19<sup>th</sup> to Saturday, July 29<sup>th</sup> and Saturday August 19<sup>th</sup> to Monday August 28<sup>th</sup>, 2000.

Automatic tube recorders were placed at all entrances and exits to the casinos. Data was collected in fifteen-minute intervals, 24-hours a day for each of the casinos. All five casinos operated on a 24-hour basis. As will be discussed later, the hourly information was unique when compared to other land uses. The following sections provide detailed information on the trip generation characteristics of the three Council Bluffs casinos. These rates were compared to the two St. Louis casinos and since the rates for all five casinos were similar, an average trip generation rate was computed.

### Peak Hour Trip Generation Rates

A trip generation rate was calculated based on the number of slot machines that were located at each casino. Generation rates were calculated for both weekdays and weekends. Weekday trip generation rates were calculated for both the peak of facility and peak of adjacent street traffic. Traffic studies for new developments generally analyze the weekday peak hour of adjacent street traffic. However, several types of developments generate higher traffic levels during times other than the adjacent street traffic peak hour. Data from the casinos indicate that their peak trip generation rates are different than the peak hour of adjacent street traffic. Table 2 depicts the average PM peak hour trip generation rates of the five casinos for the peak hour of facility, while Table 3 depicts the average PM peak hour trip generation rate for the adjacent street traffic. The PM peak hour was chosen for purposes of calculating trip generation rates because they were generally higher than the AM peak hour. Tables A1, A2, and A3 located at the end of the paper document the three Iowa casinos daily raw peak hour and time of day data.

**Table 2 – Facility Peak Hour Trip Generation**

	PM Peak Hour										Average PM Peak Hour Trips	
	Harvey's		Ameristar		Bluffs Run		St. Charles		Casino Queen		In	Out
	In	Out	In	Out	In	Out	In	Out	In	Out		
Monday - Friday	502	380	423	477	537	491	725	625	348	336	507	462
Saturday/Sunday	482	375	624	471	553	579	850	750	<i>Not Available</i>		627	544
	PM Peak Hour Per Slot										Average PM Peak Hour Trips Per Slot	
	Harvey's		Ameristar		Bluffs Run		St. Charles		Casino Queen		In	Out
	In	Out	In	Out	In	Out	In	Out	In	Out		
Monday - Friday	0.43	0.33	0.29	0.33	0.36	0.33	0.39	0.34	0.34	0.33	0.36	0.33
Saturday/Sunday	0.41	0.32	0.43	0.33	0.37	0.39	0.46	0.41	<i>Not Available</i>		0.42	0.36

Note: St. Charles weekday rate is for Friday only.

**Table 3 – Adjacent Street Peak Hour Trip Generation**

	PM Peak Hour										Average PM Peak Hour Trips	
	Harvey's		Ameristar		Bluffs Run		St. Charles		Casino Queen		In	Out
	In	Out	In	Out	In	Out	In	Out	In	Out		
Monday - Friday	453	340	427	378	442	373	475	600	Not Available		449	423
Saturday/Sunday	423	334	491	413	490	467	Not Available		Not Available		468	404
	PM Peak Hour Per Slot										Average PM Peak Hour Trips Per Slot	
	Harvey's		Ameristar		Bluffs Run		St. Charles		Casino Queen		In	Out
	In	Out	In	Out	In	Out	In	Out	In	Out		
Monday - Friday	0.39	0.29	0.29	0.26	0.30	0.25	0.26	0.32	Not Available		0.31	0.28
Saturday/Sunday	0.36	0.29	0.34	0.29	0.33	0.32	Not Available		Not Available		0.34	0.30

Note: St. Charles weekday rate is for Friday only.

The PM peak hour trip generation rates were similar for each of the three Council Bluffs casinos. These rates were found to be comparable to the two St. Louis area casinos' trip generation rates. As shown above in Table 3, there is a correlation between the number of slot machines and the traffic generated by the casinos. For example, the two St. Louis area casinos have a difference in the number of trips generated by the facility. However when the trip generation rates were developed on a per slot machine basis, the rates are quite similar. Even though the St. Charles Casino has 800 slot machines more than the Casino Queen, their trip generation rates are comparable.

HDR's analysis of the five casinos in St. Louis and Council Bluffs found that their average weekday PM peak hour of adjacent street traffic trip generation rate was 0.59 trips per slot machine, while the average weekend PM peak hour trip generation rate was 0.64 trips per slot machine. These rates were close to the weekday and weekend PM peak hour of generator, which were 0.69 trips and 0.78 trips per slot machine, respectively.

The original trip generation rates calculated for the St. Louis area casinos were based on gaming positions. For purposes of this paper the rates provided in the March ITE Journal article were converted to trips per slot machine. This was done in order to directly compare the Council Bluffs and St. Louis trip generation rates. Gaming positions are calculated based on each type of game and are a percentage of the number of slot machines. Thus, calculating the number of gaming positions can get cumbersome. The other reason slot machines were used to calculate trip generation rates was because Bluffs Run Casino does not have table games.

**Daily Trip Generation Rates**

Table 4 shows the ADTs that were collected for the three Iowa casinos. An average daily trip rate was developed based on information from the three Iowa casinos and from the St. Charles Casino. Not enough information was available in order to include the Casino Queen in these calculations. Table 5 shows the weekday and weekend daily trip rates for each of the four casinos in addition to an average daily trip rate.

**Table 4 – Average Daily Traffic (ADT)**

Day	Harvey's Daily Volume			Ameristar Daily Volume			Bluffs Run Daily Volume		
	Inbound	Outbound	ADT	Inbound	Outbound	ADT	Inbound	Outbound	ADT
	Volume	Volume		Volume	Volume		Volume	Volume	
Sunday	7,038	6,749	13,787	7,438	8,175	15,613	8,871	8,887	17,758
Monday	5,402	4,745	10,147	5,378	5,394	10,771	6,665	6,741	13,406
Tuesday	9,334	8,496	17,830	6,903	6,761	13,663	7,702	7,180	14,882
Wednesday	6,401	5,221	11,622	5,823	5,730	11,553	7,499	6,827	14,326
Thursday	6,944	5,462	12,406	5,845	5,703	11,548	8,494	7,867	16,361
Friday	8,230	5,938	14,168	8,043	7,460	15,503	9,211	8,441	17,652
Saturday	8,075	7,025	15,100	8,311	8,129	16,440	9,957	9,392	19,349

**Table 5 – Average Daily Traffic Rates**

	ADT				ADT per slot				Average ADT per slot
	Harvey's	Ameristar	Bluffs Run	St. Charles	Harvey's	Ameristar	Bluffs Run	St. Charles	
Monday - Friday	13,249	12,496	15,325	17,362	11.33	8.64	10.36	9.40	9.93
Saturday/Sunday	14,443	16,026	18,554	19,959	12.36	11.08	12.54	10.81	11.70

Note: St. Charles weekday rate is for Friday only.

The ADT was higher on weekend days compared to weekdays. As shown in Table 4 there was more than a 50% increase in the ADT on weekends at some of the casinos. Another interesting factor that made relatively large increases in ADT was the special promotions that the casinos offer. For example, Harvey's Casino had double points for slot club members on Tuesdays, which generated more traffic than a typical weekend day. Double points allow slot club members to earn extra points that can be redeemed for cash.

Another finding of interest was the amount of traffic that occurs during the late night hours. It was assumed that this was related to the fact that all five casinos evaluated in this paper were located within a metropolitan area and relatively close to an interstate. Table 6 documents the time variation of trips at the three Council Bluffs casinos and the St. Charles Casino. Again, data was not available for Casino Queen.

**Table 6 – Casino Related Time Variations of Trips**

	Percentage of Traffic during each time period									
	Harvey's		Ameristar		Bluffs Run		St. Charles		Average	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
9 AM - 9 PM	64.6	58.4	69.0	61.9	66.1	59.5	65.7	69.5	66.3	62.3
9 PM - 9 AM	35.4	41.6	31.0	38.1	33.9	40.5	34.3	30.5	33.6	37.7
12 AM - 6 AM	10.9	17.9	9.2	16.2	10.9	17.4	13.8	9.0	11.2	15.1
6 AM - 12 PM	21.0	19.6	20.7	17.3	23.1	20.8	15.8	19.0	20.1	19.2
12 PM - 6 PM	34.3	31.2	37.9	32.3	34.7	31.7	34.6	33.6	35.4	32.2
6 PM - 12 AM	33.8	31.3	32.3	34.1	31.3	30.1	35.8	38.4	33.3	33.5

Generally, most land uses do not operate on a 24-hour basis. As a result, roadways located near these casinos tend to have more traffic on them during the late night hours. The daily trip information is important because it captures some of the impacts related to off-peak traffic levels. This could lead to potential concerns of nearby residents or business owners. If the location of a potential casino was proposed near a neighborhood, the future casino could cause lighting, noise, or other environmental concerns. Our data shows some justification to these concerns over late-night traffic. Typically between the hours of 12:00 AM and 6:00 AM most land uses are not in operation and thus do not generate trips. These four casinos, on the other hand, averaged over 15% of their daily trips during these same hours. This could lead to potential complaints by nearby residents or businesses.

### **SUMMARY**

This paper included the trip generation rates of three Iowa casinos and compared their rates to that of two St. Louis casinos included in a March 1998 ITE Journal article. In general, the five casinos had comparable trip generation rates for both weekdays and weekends. These rates could be used when determining the viability of a proposed casino or the expansion of an existing casino. As always, data collected at or near the actual casino site should be used, but if this is not possible, these rates could provide for a relative comparison of whether the nearby roadways could handle the increase in traffic due to the casino.

HDR's analysis of the five casinos found that their average weekday PM peak hour of adjacent street traffic trip generation rate was 0.59 trips per slot machine, while the average weekend PM peak hour trip generation rate was 0.64 trips per slot machine. These rates were close to the weekday and weekend PM peak hour of generator, which were 0.69 trips and 0.78 trips per slot machine, respectively. The average weekday ADT was 9.93 trips per slot, while the weekend average ADT was 11.70 trips per slot.

It should also be noted that these casinos could be considered isolated in terms of walking from one to another. The generation rates of casinos that are found in clusters (Las Vegas) have different characteristics than the casinos studied in this paper. This can be related to the large number and size of casinos located within the clusters and the fact that they are generally located very close to each other. Another important piece of information that should be reviewed is a market analysis. A market analysis could give an estimate of the daily admissions expected at the casino. This could give an indication if these rates are applicable to the proposed casino. As with all land uses, variations in trip generation rates will exist, but knowing what the potential traffic impact could be is better than not having any comparative information.

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**Table A1 – Harvey’s Peak Hour Raw Data**

Day	Date	AM Peak Hour			PM Peak Hour		
		Time	Inbound Volume	Outbound Volume	Time	Inbound Volume	Outbound Volume
Thursday	7/20/00	11:00	358	209	6:00	458	317
Friday	7/21/00	10:45	323	252	5:00	548	387
Saturday	7/22/00	10:00	285	273	5:30	591	380
Sunday	7/23/00	11:00	433	265	3:30	409	462
Monday	7/24/00	10:45	280	208	4:30	347	279
Tuesday	7/25/00	11:00	562	469	6:00	715	606
Wednesday	7/26/00	10:45	320	203	5:00	440	352
Thursday	7/27/00	11:00	362	263	6:00	493	319
Friday	7/28/00	10:45	412	179	5:30	512	403
Saturday	7/29/00	11:00	304	256	5:00	518	317
Sunday	7/30/00	11:00	345	271	3:15	410	342



**Table A2 – Ameristar Peak Hour Raw Data**

Day	Date	AM Peak Hour			PM Peak Hour		
		Time	Inbound Volume	Outbound Volume	Time	Inbound Volume	Outbound Volume
Saturday	7/15/00	10:30	363	240	5:30	596	420
Sunday	7/16/00	11:00	379	388	6:00	609	543
Monday	7/17/00	10:45	248	282	3:15	314	435
Tuesday	7/18/00	11:00	430	287	3:00	463	637
Wednesday	7/19/00	10:45	340	230	5:30	429	334
Thursday	7/20/00	10:45	356	228	3:00	349	471
Friday	7/21/00	11:00	364	283	5:45	662	441
Saturday	7/22/00	11:00	370	265	5:45	700	461
Sunday	7/23/00	11:00	409	351	5:45	592	461
Monday	7/24/00	10:45	299	289	3:15	319	462
Tuesday	7/25/00	11:00	458	343	3:00	427	557

**Table A3 – Bluffs Run Peak Hour Raw Data**

Day	AM Peak Hour			PM Peak Hour		
	Time	Inbound Volume	Outbound Volume	Time	Inbound Volume	Outbound Volume
Monday	11:00	348	420	15:00	443	416
Tuesday	10:45	436	393	15:00	549	513
Wednesday	11:00	417	310	15:00	542	474
Thursday	10:45	425	370	15:30	571	507
Friday	11:00	406	379	15:30	580	544
Saturday	11:00	478	361	16:00	486	635
Sunday	10:15	423	378	15:00	620	523

# Gaming Casino Traffic

**THE AUTHORS  
SUMMARIZE RESULTS  
FROM TRAFFIC VOLUME  
STUDIES OF TWO  
GAMING CASINOS—  
THE CASINO ST. CHARLES  
AND THE CASINO QUEEN.**

GAMING CASINOS GENERATE significant volumes of traffic—especially during the evening peak hour. Two studies of existing operations were made in the St. Louis, Mo., USA, metropolitan area, including hourly vehicular volumes and daily variations. Also, the projections from an economic report for a proposed casino were utilized to provide multiplication factors for traffic counted in any given month, to that expected during the peak summer months.

Gaming casinos have three general types of positions—individual, such as slots and video poker; table, such as blackjack and poker; and audience, such as Keno or racing. For riverboat type facilities, a land-side staging area is used. Other customary services include bar and restaurant.

The Casino St. Charles is located in the metropolitan area, west of the Missouri River. It is reported to have about 2,500 gaming positions, about 80 percent of which are slots or video poker machines.

In January 1995, counts of entering and leaving traffic were taken across weekdays, Saturday and Sunday.<sup>1</sup> For the peak hours, the counts were converted into rates of flow in and out of the facility per gaming position and were expanded to the summer peak conditions (see Table 1). The highest weekday traffic occurs on Friday, while the absolute peak hour occurs on Saturday evening.

From the counts, it also was possible to calculate the hourly variation by the days of the week during which counts

**Table 1. Casino St. Charles peak hour rates of vehicular flow per gaming position.**

Day	Hour	Rate*	
Thursday facility peak	18:00 to 19:00	IN	0.25
		OUT	0.23
Thursday street peak	16:30 to 17:30	IN	0.19
		OUT	0.23
Friday facility peak	18:00 to 19:00	IN	0.29
		OUT	0.25
Friday street peak	16:30 to 17:30	IN	0.19
		OUT	0.24
Saturday facility peak	18:00 to 19:00	IN	0.34
		OUT	0.30
Sunday facility peak	13:00 to 14:00	IN	0.25
	16:00 to 17:00	OUT	0.25

\*Expanded to summer peaks.  
Source: Ref. 1

**BY PAUL C. BOX AND  
WILLIAM BUNTE**

were taken. These data are given in Table 2. It should be noted that the facility is quite busy from 09:00 through 22:00 hours. Unlike residential, office or industrial developments, gaming casinos have no significant AM peak hour loading.

A second study was taken at the Casino Queen, a land-based facility on the north side of the Mississippi River in East St. Louis, Ill., USA. Table 3 gives the rates of flow in the PM peak hour per gaming position for customer traffic and separately for employee/service vehicles. The counts have been expanded to peak summer month activity. Only one truck entered or left the casino during the PM peak, which was from 16:30 to 17:30. This is a much smaller facility than the Casino St. Charles, with only 1,200 gaming positions. About 80 percent are slots or video poker. Furthermore, this casino is only open 22 hours per day (09:00 through 07:00). Pickup/dropoff traffic also was observed at the Casino Queen, and amounted to about 10 vehicles during the PM peak. Data on various characteristics of the casinos, such as floor area and employees, are given in Table 4.

The peak gaming months are reported as May, July and August. These may be considered as the "design" condition. The percent of average months and the monthly variation in expected casino traffic, provided in the form of a multiplier for counts taken in a given month to those projected during the peak months, is given in Table 5. For example, a February count would be expanded by 30 percent (1.3 times the count) to reach peak month volumes. The data are taken from an economic study,<sup>3</sup> prepared in connection with a gaming facility zoning application to St. Louis County.

Additional studies of casino traffic are warranted because of widely varying characteristics. For example, the St. Louis casinos had similar rates of peak flow per gaming position. However, the St. Charles facility continued to experience significant flow and had a weekday peak just after the PM peak, while the Casino Queen traffic dropped abruptly at the end of the rush hour. The count was discontinued at this point, because

**Table 2. Hourly variation by day of week.**

Hour Begin	Percent of Daily Vehicular Traffic					
	IN			OUT		
	Weekday*	Sat.	Sun.	Weekday*	Sat.	Sun.
00	2.5	3.0	3.9	4.3	5.9	7.3
01	1.8	2.7	3.7	3.9	4.4	6.2
02	1.2	1.3	1.9	3.3	4.2	5.4
03	0.7	0.8	1.0	3.2	4.7	5.2
04	1.0	0.6	0.9	3.3	3.7	3.9
05	0.7	0.6	0.9	1.6	2.0	2.5
06	1.0	0.7	0.8	0.6	0.7	0.8
07	1.6	1.1	1.3	0.6	0.5	0.4
08	3.9	3.3	4.4	1.2	0.9	0.8
09	5.6	4.7	6.1	1.3	0.9	0.9
10	5.2	4.3	5.6	2.1	1.7	1.9
11	5.5	4.9	5.7	3.0	2.6	2.9
12	5.8	4.8	6.6	4.1	2.8	3.8
13	6.0	5.2	7.2	5.2	3.5	4.4
14	5.4	5.6	6.5	6.1	4.1	5.5
15	5.2	5.6	6.1	6.4	5.8	6.5
16	5.3	5.7	5.8	7.1	6.3	6.6
17	5.9	6.7	6.2	6.6	6.8	6.0
18	7.8	7.8	5.8	7.0	6.9	6.4
19	7.4	7.7	4.0	5.7	6.4	5.8
20	6.3	6.5	3.9	5.3	6.7	4.3
21	5.3	6.1	5.0	5.7	6.1	4.3
22	4.7	5.7	3.4	6.3	6.0	4.6
23	4.0	4.6	3.3	6.1	6.4	3.6

\*Average Monday AM, Thursday PM plus Friday.  
Source: Ref. 1.

**Table 3. Evening peak hour Casino Queen vehicular traffic.**

Type of Traffic	Rate per Gaming Position*	
	IN	OUT
Customer	0.27	0.26
Employee/Service	0.02	0.02
TOTAL	0.29	0.28

\*Expanded to peak months per Ref. 3.  
Source: Ref. 2.

**Table 4. Site characteristics.**

	St. Charles	Casino Queen
Floor area (gaming and staging), square feet*	47,000	65,000
Employees	—	1,200
Employees at peak time	700	450
Capacity (gamblers)	4,200	—

\*Conversion: One square foot = 0.093 square meter.

**Table 5. Monthly variation.**

Month of Count	Percent of Average Month	Multiplier to Expand to Seasonal Peak
January.....	111%.....	1.1
February.....	90%.....	1.3
March.....	111%.....	1.1
April.....	108%.....	1.1
May.....	116%.....	1.0
June.....	108%.....	1.1
July.....	121%.....	1.0
August.....	121%.....	1.0
September.....	113%.....	1.1
October.....	105%.....	1.2
November.....	98%.....	1.2
December.....	105%.....	1.2

Source: Ref. 3.

the scope of study was intended to analyze only the PM street peak hour generation.

The two sites studied have provided useful information on hourly and monthly variation. These data should guide studies of other sites. Separate counts of customer and employee vehicular traffic, plus trucks, should be taken on busy weekdays and perhaps on a Saturday evening, if a street capacity problem is likely. At some locations, large numbers of patrons may arrive by bus, which relates to geometric design of driveways.

Other studies of gaming facilities needed include parking generation, which represents a major factor. The development of gaming on Native American tribal lands is often away from or at the fringe of metropolitan areas. Traffic and parking characteristics of these facilities may differ from those

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within a metropolitan area. Busing may represent a more significant factor—especially relative to parking layout. ■



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*References*

1. *Traffic Impact Study for the Ultimate Development of St. Charles Riverfront Station*, Final Report. Crawford, Bunte, Brammeier, August 1995, unpublished.
2. *Study of Casino Queen*. Paul C. Box and Associates Inc., November 1996, unpublished.
3. *Horseshoe Gaming, St. Louis County Project*. Economics Research Associates, as presented to County Plan Commission about September 1996, unpublished.



***TRAFFIC IMPACT STUDY***

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**APPENDIX E**

**Level of Service Definitions**

## LEVEL OF SERVICE

Level of Service is a term used to describe vehicle operator satisfaction with the driving experience. Research has determined that operator satisfaction is based primarily on travel speed and delay. In urban environments these factors, travel speed and delay, are primarily controlled by the operation of intersections.

By utilizing models to simulate the flow of traffic at intersections, the average delay experienced by vehicles can be estimated. These models consider such factors as traffic volumes, roadway geometry, traffic control, and driver behavior. Levels of Service designations are based on a comparison of the average delays calculated by the models with perceived acceptable delays.

The following tables illustrate the guidelines used for designating Levels of Service at Intersections:

Level of Service Criteria  
for Signalized Intersections<sup>(1)</sup>

Level of Service	Control Delay (seconds per vehicle)
A	< 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

<sup>(1)</sup> Table 6-3, Level of Service from Control Delay (2000 HCM)

Level of Service Criteria  
for Unsignalized Intersections<sup>(2)</sup>

Level of Service	Intersection Delay (seconds per vehicle)
a	< 10
b	> 10 and ≤ 15
c	> 15 and ≤ 25
d	> 25 and ≤ 35
e	> 35 and ≤ 40
f	> 50

<sup>(2)</sup> Table 6-4, Level of Service Criteria for TWSC and AWSC intersections (2000 HCM)



***TRAFFIC IMPACT STUDY***

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**APPENDIX F**

**Capacity Analyses**

P o c o n o *P* M a n o r  
R e s o r t & C a s i n o

***TRAFFIC IMPACT STUDY***

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**Existing 2005 Conditions**

Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2005 Existing AM Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.995			0.879			0.980	
Flt Protected	0.950			0.950				0.995			0.966	
Satd. Flow (prot)	1711	1852	0	1770	3522	0	0	1629	0	0	1822	0
Flt Permitted	0.478			0.184				0.966			0.582	
Satd. Flow (perm)	861	1852	0	343	3522	0	0	1582	0	0	1098	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			356			11	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	20	464	20	141	425	16	39	3	359	59	12	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	504	22	153	462	17	42	3	390	64	13	13
Lane Group Flow (vph)	22	526	0	153	479	0	0	435	0	0	90	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	38.0	38.0	0.0	14.0	52.0	0.0	38.0	38.0	0.0	38.0	38.0	0.0
Total Split (%)	42.2%	42.2%	0.0%	15.6%	57.8%	0.0%	42.2%	42.2%	0.0%	42.2%	42.2%	0.0%
Maximum Green (s)	31.0	31.0		7.0	45.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	34.0	34.0		48.0	48.0			34.0			34.0	
Actuated g/C Ratio	0.38	0.38		0.53	0.53			0.38			0.38	
v/c Ratio	0.07	0.75		0.45	0.25			0.53			0.21	
Control Delay	18.8	32.2		11.5	6.2			7.1			18.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	18.8	32.2		11.5	6.2			7.1			18.2	
LOS	B	C		B	A			A			B	
Approach Delay		31.7			7.5			7.1			18.2	
Approach LOS		C			A			A			B	
Queue Length 50th (ft)	8	254		19	31			29			30	
Queue Length 95th (ft)	24	379		32	42			104			65	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	325	702		341	1881			819			422	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.75		0.45	0.25			0.53			0.21	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 15.7 Intersection LOS: B  
 Intersection Capacity Utilization 67.4% ICU Level of Service C  
 Analysis Period (min) 15

**Splits and Phases: 3: SR 940 & Long Pond Road**

ø2	ø3	ø4
38 s	14 s	38 s
ø6	ø8	
38 s	52 s	

HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2005 Existing AM Peak  
 11/23/2005

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	710	172	0	496	85	0	0	0	154	0	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	772	187	0	539	92	0	0	0	167	0	93
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	632			959			1135	1403	772	1357	1544	316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	632			959			1135	1403	772	1357	1544	316
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	0	100	86
cM capacity (veh/h)	947			713			136	139	342	108	114	680
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	772	187	359	272	261							
Volume Left	0	0	0	0	167							
Volume Right	0	187	0	92	93							
cSH	1700	1700	1700	1700	154							
Volume to Capacity	0.45	0.11	0.21	0.16	1.69							
Queue Length 95th (ft)	0	0	0	0	465							
Control Delay (s)	0.0	0.0	0.0	0.0	389.1							
Lane LOS						F						
Approach Delay (s)	0.0			0.0	389.1							
Approach LOS						F						
<b>Intersection Summary</b>												
Average Delay			54.8									
Intersection Capacity Utilization			57.8%		ICU Level of Service		B					
Analysis Period (min)			15									

Lanes, Volumes, Timings  
 9: SR 940 & I-380 NB Ramps

2005 Existing AM Peak  
 11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.831					0.950					
Satd. Flow (perm)	0	2843	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						36			112			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	81	743	0	0	481	33	100	0	103	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	808	0	0	523	36	109	0	112	0	0	0
Lane Group Flow (vph)	0	896	0	0	523	36	109	0	112	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8				2			
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	46.5	46.5	0.0	0.0	46.5	46.5	43.5	0.0	43.5	0.0	0.0	0.0
Total Split (%)	51.7%	51.7%	0.0%	0.0%	51.7%	51.7%	48.3%	0.0%	48.3%	0.0%	0.0%	0.0%
Maximum Green (s)	40.0	40.0			40.0	40.0	37.0		37.0			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		42.5			42.5	42.5	39.5		39.5			
Actuated g/C Ratio		0.47			0.47	0.47	0.44		0.44			
v/c Ratio		0.67			0.32	0.05	0.15		0.16			
Control Delay		14.8			15.5	4.7	15.9		3.7			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		14.8			15.5	4.7	15.9		3.7			
LOS		B			B	A	B		A			
Approach Delay		14.8			14.8							
Approach LOS		B			B							
Queue Length 50th (ft)		111			93	0	36		0			
Queue Length 95th (ft)		164			130	16	69		29			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1343			1615	767	725		712			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.67			0.32	0.05	0.15		0.16			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 14.1 Intersection LOS: B  
 Intersection Capacity Utilization 51.7% ICU Level of Service A  
 Analysis Period (min) 15

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

02	04
43.5 s	46.5 s
	08
	46.5 s

HCM Unsignalized Intersection Capacity Analysis  
 3: 940-WB Ramps & SR 0314

2005 Existing AM Peak  
 11/23/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↕	↕	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	15	53	54	75	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	58	59	82	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1202		
pX, platoon unblocked						
vC, conflicting volume	255	82	82			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	255	82	82			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	96			
cM capacity (veh/h)	705	978	1516			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	3	16	38	78	82	45
Volume Left	3	0	38	19	0	0
Volume Right	0	16	0	0	0	45
cSH	705	978	1516	1516	1700	1700
Volume to Capacity	0.00	0.02	0.04	0.04	0.05	0.03
Queue Length 95th (ft)	0	1	3	3	0	0
Control Delay (s)	10.1	8.7	7.5	2.1	0.0	0.0
Lane LOS	B	A	A	A		
Approach Delay (s)	9.0		3.8		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			19.6%		ICU Level of Service	A
Analysis Period (min)			15			

















Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	37	278	14	70	78	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	302	15	76	85	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	460					
pX, platoon unblocked						
vC, conflicting volume	153	85	85			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	153	85	85			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	68	99			
cM capacity (veh/h)	815	957	1510			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	40	302	15	38	38	85	13
Volume Left	40	0	15	0	0	0	0
Volume Right	0	302	0	0	0	0	13
cSH	815	957	1510	1700	1700	1700	1700
Volume to Capacity	0.05	0.32	0.01	0.02	0.02	0.05	0.01
Queue Length 95th (ft)	4	34	1	0	0	0	0
Control Delay (s)	9.6	10.5	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	10.4		1.2			0.0	
Approach LOS	B						

Intersection Summary			
Average Delay		6.9	
Intersection Capacity Utilization	28.0%		ICU Level of Service A
Analysis Period (min)		15	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗	↖	↑	↗	↖	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.999				0.850			0.850		0.864	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3536	0	1770	3539	1583	1770	2111	1583	1829	1663	0
Flt Permitted				0.286			0.722			0.645		
Satd. Flow (perm)	0	3536	0	533	3539	1583	1345	2111	1583	1242	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				146			21		49	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	452	4	20	401	134	69	138	19	37	5	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	491	4	22	436	146	75	150	21	40	5	49
Lane Group Flow (vph)	0	495	0	22	436	146	75	150	21	40	54	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	14.0	0.0	20.0	34.0	16.0	16.0	40.0	40.0	16.0	40.0	0.0
Total Split (%)	0.0%	15.6%	0.0%	22.2%	37.8%	17.8%	17.8%	44.4%	44.4%	17.8%	44.4%	0.0%
Maximum Green (s)		7.0		13.0	27.0	11.0	11.0	35.0	35.0	11.0	35.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		13.1		18.3	18.1	28.5	43.2	37.3	37.3	42.0	36.7	
Actuated g/C Ratio		0.18		0.23	0.25	0.38	0.58	0.52	0.52	0.57	0.51	
v/c Ratio		0.77		0.08	0.49	0.21	0.09	0.14	0.03	0.05	0.06	
Control Delay		42.0		22.8	25.3	3.4	6.3	11.9	5.6	6.3	5.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		42.0		22.8	25.3	3.4	6.3	11.9	5.6	6.3	5.0	
LOS		D		C	C	A	A	B	A	A	A	
Approach Delay		42.0			19.9			9.6			5.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			B			A				A
90th %ile Green (s)		7.0		7.5	21.5	7.2	8.6	36.4	36.4	7.2		35.0
90th %ile Term Code		Max		Gap	Hold	Gap	Gap	Hold	Hold	Gap		MaxR
70th %ile Green (s)		7.0		6.7	20.7	6.6	7.5	35.9	35.9	6.6		35.0
70th %ile Term Code		Max		Gap	Hold	Gap	Gap	Hold	Hold	Gap		MaxR
50th %ile Green (s)		14.0		0.0	14.0	6.0	6.6	35.6	35.6	6.0		35.0
50th %ile Term Code		Hold		Skip	Gap	Gap	Gap	Hold	Hold	Gap		MaxR
30th %ile Green (s)		12.3		0.0	12.3	5.7	6.0	35.3	35.3	5.7		35.0
30th %ile Term Code		Hold		Skip	Gap	Gap	Gap	Hold	Hold	Gap		MaxR
10th %ile Green (s)		8.7		0.0	8.7	0.0	0.0	35.0	35.0	0.0		35.0
10th %ile Term Code		Hold		Skip	Gap	Skip	Skip	MaxR	MaxR	Skip		MaxR
Queue Length 50th (ft)		104		8	90	0	10	34	0	5		1
Queue Length 95th (ft)		#258		25	135	30	31	78	12	19		21
Internal Link Dist (ft)		1752			4920			2736				2592
Turn Bay Length (ft)												
Base Capacity (vph)		643		350	1273	696	848	1090	828	801		869
Starvation Cap Reductn		0		0	0	0	0	0	0	0		0
Spillback Cap Reductn		0		0	0	0	0	0	0	0		0
Storage Cap Reductn		0		0	0	0	0	0	0	0		0
Reduced v/c Ratio		0.77		0.06	0.34	0.21	0.09	0.14	0.03	0.05		0.06

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 72.2  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 24.8  
 Intersection Capacity Utilization 37.2%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 82.1  
 70th %ile Actuated Cycle: 80.2  
 50th %ile Actuated Cycle: 72.6  
 30th %ile Actuated Cycle: 70.3  
 10th %ile Actuated Cycle: 55.7  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: SR 940 & Industrial Dr

01	02	03	04
16 s	40 s	20 s	14 s
05	06	07	08
16 s	40 s	34 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.250			0.308			0.950			0.950		
Satd. Flow (perm)	466	3529	0	574	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				77			46			35
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	69	424	10	40	491	71	15	0	42	62	0	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	461	11	43	534	77	16	0	46	67	0	35
Lane Group Flow (vph)	75	472	0	43	534	77	16	0	46	67	0	35
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	14.0	24.0	0.0	14.0	24.0	24.0	26.0	0.0	26.0	26.0	0.0	26.0
Total Split (%)	15.6%	26.7%	0.0%	15.6%	26.7%	26.7%	28.9%	0.0%	28.9%	28.9%	0.0%	28.9%
Maximum Green (s)	7.0	17.0		7.0	17.0	17.0	20.0		20.0	20.0		20.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	30.0	20.0		30.0	20.0	20.0	22.0		22.0	22.0		22.0
Actuated g/C Ratio	0.33	0.22		0.33	0.22	0.22	0.24		0.24	0.24		0.24
v/c Ratio	0.25	0.60		0.13	0.68	0.19	0.04		0.11	0.08		0.08
Control Delay	20.6	35.0		19.1	37.1	8.4	26.3		9.2	26.6		9.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	20.6	35.0		19.1	37.1	8.4	26.3		9.2	26.6		9.9
LOS	C	C		B	D	A	C		A	C		A
Approach Delay		33.0			32.6							
Approach LOS		C			C							
Queue Length 50th (ft)	27	126		15	146	0	7		0	14		0
Queue Length 95th (ft)	57	178		37	203	35	23		26	31		23
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	300	786		324	786	412	433		422	839		413
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0	0	0		0	0		0
Storage Cap Reductn	0	0		0	0	0	0		0	0		0
Reduced v/c Ratio	0.25	0.60		0.13	0.68	0.19	0.04		0.11	0.08		0.08

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 31.0 Intersection LOS: C  
 Intersection Capacity Utilization 30.7% ICU Level of Service A  
 Analysis Period (min) 15

**Splits and Phases: 6: SR 940 & Oak St**

ø2	ø6	ø3	ø4
26 s	26 s	14 s	24 s
		ø7	ø8
		14 s	24 s

Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2005 Existing AM Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕			↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frnt		0.961				0.850		0.995			0.997	
Flt Protected		0.971			0.958		0.950				0.983	
Satd. Flow (prot)	0	2054	0	0	1987	1619	1801	3543	0	0	3481	0
Flt Permitted		0.971			0.958		0.174				0.598	
Satd. Flow (perm)	0	2054	0	0	1987	1619	330	3543	0	0	2118	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				324		3			3	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	46	9	22	49	7	298	8	288	10	327	573	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	50	10	24	53	8	324	9	313	11	355	623	20
Lane Group Flow (vph)	0	84	0	0	61	324	9	324	0	0	998	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2 9		1	6 1	
Permitted Phases	4	4		8	8	8	2 9	2 9		6 1	6 1	
Detector Phases	4	4		8	8	8	9	2 9		1	6 1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	35.0	0.0	41.0	66.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	15.5%	15.5%	15.5%	9.1%	31.8%	0.0%	37.3%	60.0%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		14.0			15.2	15.2	31.1	33.1			62.2	
Actuated g/C Ratio		0.13			0.14	0.14	0.29	0.31			0.58	
v/c Ratio		0.30			0.21	0.64	0.04	0.29			0.57	
Control Delay		38.3			44.6	11.1	27.6	29.2			4.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.7	
Total Delay		38.3			44.6	11.1	27.6	29.2			5.2	
LOS		D			D	B	C	C			A	
Approach Delay		38.3			16.4			29.2			5.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			B			C			A		
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
50th %ile Green (s)	10.0	10.0		9.7	9.7	9.7	3.0			34.0		
50th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
30th %ile Green (s)	8.5	8.5		8.4	8.4	8.4	3.0			34.0		
30th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	0.0	0.0		12.4	12.4	12.4	3.0			34.0		
10th %ile Term Code	Skip	Skip		Hold	Hold	Hold	Max			Hold		
Queue Length 50th (ft)		44			39	0	4	91				45
Queue Length 95th (ft)		91			80	84	17	131				m43
Internal Link Dist (ft)		1072			1692			1410				270
Turn Bay Length (ft)						150	150					
Base Capacity (vph)		303			291	514	208	1104				1740
Starvation Cap Reductn		0			0	0	0	0				392
Spillback Cap Reductn		0			0	0	0	0				0
Storage Cap Reductn		0			0	0	0	0				0
Reduced v/c Ratio		0.28			0.21	0.63	0.04	0.29				0.74

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 106.4  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 13.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.3%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.7  
 30th %ile Actuated Cycle: 106.9  
 10th %ile Actuated Cycle: 95.4

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611

#1 ↑ ø9 25 s	#2 ↑ ø2 25 s	#1 ↙ ø1 41 s	#2 ↘ ø5 34 s	#1 ↙ ø4 17 s	#1 ↘ ø8 17 s	#1 ↑ ø5 10 s	#2 ↑ ø2 10 s
#1 ↓ ø6 25 s	#2 ↓ ø3 24 s	#2 ↗ ø7 17 s	#1 ↗ ø4 17 s	#1 ↖ ø8 17 s			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		0	0		1	0		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5		5	5		50	5		50	5	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.904						0.962			0.944	
Flt Protected	0.950				0.965			0.981				
Satd. Flow (prot)	1863	1708	0	0	1820	0	0	3399	0	0	3400	0
Flt Permitted	0.950				0.965			0.607			0.952	
Satd. Flow (perm)	1863	1708	0	0	1820	0	0	2103	0	0	3236	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		67						74			104	
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	160	104	185	284	104	1	245	227	160	3	449	272
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	174	113	201	309	113	1	266	247	174	3	488	296
Lane Group Flow (vph)	174	314	0	0	423	0	0	687	0	0	787	0
Turn Type	Split		custom				pm+pt			Perm		
Protected Phases	7	7		3	3		5 9	5 2 9				6
Permitted Phases				3			5 2 9	5 9		6	6	
Detector Phases	7	7		3	3		5 9	5 2 9		6	6	
Minimum Initial (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Minimum Split (s)	17.0	17.0		17.0	17.0					17.0	17.0	
Total Split (s)	17.0	17.0	0.0	24.0	24.0	0.0	44.0	69.0	0.0	25.0	25.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	21.8%	21.8%	0.0%	40.0%	62.7%	0.0%	22.7%	22.7%	0.0%
Maximum Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Recall Mode	None	None		None	None					Min	Min	
Act Effct Green (s)	15.0	15.0			22.1			61.3			23.1	
Actuated g/C Ratio	0.14	0.14			0.21			0.58			0.22	
v/c Ratio	0.66	1.05			1.12			0.40			1.01	
Control Delay	57.5	102.2			123.4			6.8			70.7	
Queue Delay	0.0	0.0			0.0			0.2			0.0	
Total Delay	57.5	102.2			123.4			7.0			70.7	
LOS	E	F			F			A			E	
Approach Delay		86.2			123.4			7.0			70.7	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			A			E		
90th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
90th %ile Term Code	Max	Max		Max	Max					Max	Max	
70th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
70th %ile Term Code	Max	Max		Max	Max					Max	Max	
50th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
50th %ile Term Code	Max	Max		Max	Max					Max	Max	
30th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
30th %ile Term Code	Max	Max		Max	Max					Max	Max	
10th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
10th %ile Term Code	Max	Max		Max	Max					Max	Max	
Queue Length 50th (ft)	118	~204				~353		46				~281
Queue Length 95th (ft)	#208	#383				#549		41				#408
Internal Link Dist (ft)		1950				1023		270				2032
Turn Bay Length (ft)												
Base Capacity (vph)	263	299			378			1718				783
Starvation Cap Reductn	0	0			0			382				0
Spillback Cap Reductn	0	0			0			0				0
Storage Cap Reductn	0	0			0			0				0
Reduced v/c Ratio	0.66	1.05			1.12			0.51				1.01

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 106.4  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 64.9  
 Intersection LOS: E  
 Intersection Capacity Utilization 87.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.7  
 30th %ile Actuated Cycle: 106.9  
 10th %ile Actuated Cycle: 95.4

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 940 & SR 611

#1 ↑ ø9 25 s	#2 ↑ ø2 25 s	#1 ↙ ø1 41 s	#2 ↘ ø5 34 s	#1 ↙ ø3 24 s	#2 ↘ ø7 17 s	#1 ↘ ø4 17 s	#1 ↘ ø8 17 s	#1 ↙ ø1 10 s	#2 ↘ ø2 10 s
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	55	366	103	329	641	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	398	112	358	697	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1109	358	715			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1109	358	715			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	38	87			
cM capacity (veh/h)	178	639	881			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	458	231	238	464	251
Volume Left	60	112	0	0	0
Volume Right	398	0	0	0	18
cSH	477	881	1700	1700	1700
Volume to Capacity	0.96	0.13	0.14	0.27	0.15
Queue Length 95th (ft)	298	11	0	0	0
Control Delay (s)	61.0	5.4	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	61.0	2.6		0.0	
Approach LOS	F				

Intersection Summary					
Average Delay			17.8		
Intersection Capacity Utilization	66.0%		ICU Level of Service	C	
Analysis Period (min)	15				



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↘	↕	↘	↙	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frnt		0.850	0.928			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3284	0	1770	3539
Flt Permitted	0.950				0.214	
Satd. Flow (perm)	1770	1583	3284	0	399	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		58	380			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	301	53	379	350	191	816
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	58	412	380	208	887
Lane Group Flow (vph)	327	58	792	0	208	887
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	22.0	22.0	30.0	0.0	13.0	43.0
Total Split (%)	33.8%	33.8%	46.2%	0.0%	20.0%	66.2%
Maximum Green (s)	15.0	15.0	22.0		5.0	35.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	16.9	16.9	26.0		39.0	39.0
Actuated g/C Ratio	0.26	0.26	0.41		0.61	0.61
v/c Ratio	0.70	0.13	0.51		0.48	0.41
Control Delay	30.3	6.5	8.4		9.6	7.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	30.3	6.5	8.4		9.6	7.4
LOS	C	A	A		A	A
Approach Delay	26.8		8.4			7.8
Approach LOS	C		A			A

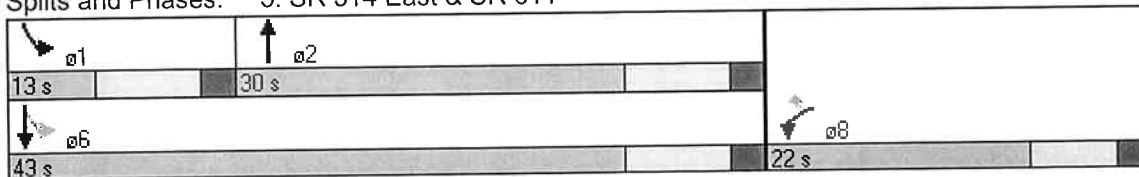


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	15.0	15.0	22.0		5.0	35.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	15.0	15.0	22.0		5.0	35.0
70th %ile Term Code	Max	Max	MaxR		Max	MaxR
50th %ile Green (s)	15.0	15.0	22.0		5.0	35.0
50th %ile Term Code	Max	Max	MaxR		Max	MaxR
30th %ile Green (s)	14.4	14.4	22.0		5.0	35.0
30th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
10th %ile Green (s)	10.3	10.3	22.0		5.0	35.0
10th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
Queue Length 50th (ft)	114	0	56		33	86
Queue Length 95th (ft)	#196	23	100		60	121
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	490	480	1562		437	2160
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.67	0.12	0.51		0.48	0.41

**Intersection Summary**

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 63.9  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 11.2  
 Intersection Capacity Utilization 59.0%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 65  
 70th %ile Actuated Cycle: 65  
 50th %ile Actuated Cycle: 65  
 30th %ile Actuated Cycle: 64.4  
 10th %ile Actuated Cycle: 60.3  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 5: SR 314 East & SR 611**



Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2005 Existing Afternoon Peak  
11/23/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.986			0.891			0.972	
Flt Protected	0.950			0.950				0.992			0.968	
Satd. Flow (prot)	1711	1835	0	1770	3490	0	0	1646	0	0	1811	0
Flt Permitted	0.354			0.170				0.935			0.634	
Satd. Flow (perm)	637	1835	0	317	3490	0	0	1552	0	0	1186	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			29			259			15	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	17	491	56	364	657	68	51	7	238	44	9	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	534	61	396	714	74	55	8	259	48	10	15
Lane Group Flow (vph)	18	595	0	396	788	0	0	322	0	0	73	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	33.0	33.0	0.0	14.0	47.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	47.1%	47.1%	0.0%	20.0%	67.1%	0.0%	32.9%	32.9%	0.0%	32.9%	32.9%	0.0%
Maximum Green (s)	26.0	26.0		7.0	40.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	29.0	29.0		43.0	43.0			19.0			19.0	
Actuated g/C Ratio	0.41	0.41		0.61	0.61			0.27			0.27	
v/c Ratio	0.07	0.78		0.99	0.37			0.53			0.22	
Control Delay	13.4	26.2		57.7	7.0			8.9			18.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	13.4	26.2		57.7	7.0			8.9			18.5	
LOS	B	C		E	A			A			B	
Approach Delay		25.8			24.0			8.9			18.5	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)	4	210		98	74			21			19	
Queue Length 95th (ft)	16	#376		#268	104			85			50	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	264	766		402	2155			610			333	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.78		0.99	0.37			0.53			0.22	

**Intersection Summary**













Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay: 22.1 Intersection LOS: C  
 Intersection Capacity Utilization 77.0% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 3: SR 940 & Long Pond Road**

ø2	ø3	ø4
23 s	14 s	33 s
ø6	ø8	
23 s	47 s	













HCM Unsignalized Intersection Capacity Analysis  
6: SR 940 & I-380 SB Ramps

2005 Existing Afternoon Peak  
11/23/2005

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↗		↑↑						↕		
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Volume (veh/h)	0	625	148	0	994	173	0	0	0	48	0	95	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	679	161	0	1080	188	0	0	0	52	0	103	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None			None			
Median storage veh													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1268			840				1323	1948	679	1854	2015	634
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1268			840				1323	1948	679	1854	2015	634
tC, single (s)	4.1			4.1				7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)													
tF (s)	2.2			2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100				100	100	100	0	100	76
cM capacity (veh/h)	544			791				86	64	394	46	58	422
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1								
Volume Total	679	161	720	548	155								
Volume Left	0	0	0	0	52								
Volume Right	0	161	0	188	103								
cSH	1700	1700	1700	1700	112								
Volume to Capacity	0.40	0.09	0.42	0.32	1.39								
Queue Length 95th (ft)	0	0	0	0	271								
Control Delay (s)	0.0	0.0	0.0	0.0	291.0								
Lane LOS					F								
Approach Delay (s)	0.0			0.0	291.0								
Approach LOS					F								
<b>Intersection Summary</b>													
Average Delay			20.0										
Intersection Capacity Utilization			48.2%		ICU Level of Service				A				
Analysis Period (min)			15										

Lanes, Volumes, Timings  
9: SR 940 & I-380 NB Ramps

2005 Existing Afternoon Peak  
11/23/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.771					0.950					
Satd. Flow (perm)	0	2638	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)						148			145			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	63	619	0	0	930	136	237	0	133	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	673	0	0	1011	148	258	0	145	0	0	0
Lane Group Flow (vph)	0	741	0	0	1011	148	258	0	145	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.5	66.5	0.0	0.0	66.5	66.5	23.5	0.0	23.5	0.0	0.0	0.0
Total Split (%)	73.9%	73.9%	0.0%	0.0%	73.9%	73.9%	26.1%	0.0%	26.1%	0.0%	0.0%	0.0%
Maximum Green (s)	60.0	60.0			60.0	60.0	17.0		17.0			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.5			62.5	62.5	19.5		19.5			
Actuated g/C Ratio		0.69			0.69	0.69	0.22		0.22			
v/c Ratio		0.40			0.43	0.13	0.72		0.33			
Control Delay		6.6			6.6	1.1	45.7		7.7			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		6.6			6.6	1.1	45.7		7.7			
LOS		A			A	A	D		A			
Approach Delay		6.6			5.9							
Approach LOS		A			A							
Queue Length 50th (ft)		81			112	0	137		0			
Queue Length 95th (ft)		111			147	16	#244		47			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1832			2376	1145	358		434			







Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↶	↷	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	17	213	123	78	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	18	232	134	85	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1202					
pX, platoon unblocked						
vC, conflicting volume	682	85	85			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682	85	85			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	85			
cM capacity (veh/h)	352	974	1512			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	18	154	211	85	45
Volume Left	1	0	154	77	0	0
Volume Right	0	18	0	0	0	45
cSH	352	974	1512	1512	1700	1700
Volume to Capacity	0.00	0.02	0.15	0.15	0.05	0.03
Queue Length 95th (ft)	0	1	14	14	0	0
Control Delay (s)	15.3	8.8	7.8	3.7	0.0	0.0
Lane LOS	C	A	A	A		
Approach Delay (s)	9.1		5.4		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			25.8%	ICU Level of Service	A	
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↶	↷	↶	↕	↕	↷	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	75	74	41	261	71	24	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	82	80	45	284	77	26	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage veh							
Upstream signal (ft)	460						
pX, platoon unblocked							
vC, conflicting volume	308	77	77				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	308	77	77				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	87	92	97				
cM capacity (veh/h)	640	968	1519				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	82	80	45	142	142	77	26
Volume Left	82	0	45	0	0	0	0
Volume Right	0	80	0	0	0	0	26
cSH	640	968	1519	1700	1700	1700	1700
Volume to Capacity	0.13	0.08	0.03	0.08	0.08	0.05	0.02
Queue Length 95th (ft)	11	7	2	0	0	0	0
Control Delay (s)	11.4	9.1	7.4	0.0	0.0	0.0	0.0
Lane LOS	B	A	A				
Approach Delay (s)	10.3		1.0			0.0	
Approach LOS	B						
<b>Intersection Summary</b>							
Average Delay			3.4				
Intersection Capacity Utilization			19.8%	ICU Level of Service	A		
Analysis Period (min)			15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↘	↑↑	↗	↘	↑	↗	↘	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.998				0.850			0.850		0.873	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3532	0	1770	3539	1583	1770	2111	1583	1829	1680	0
Flt Permitted				0.200			0.262			0.652		
Satd. Flow (perm)	0	3532	0	373	3539	1583	488	2111	1583	1255	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				48			67		164	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	609	8	89	533	44	302	125	62	105	60	322
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	662	9	97	579	48	328	136	67	114	65	350
Lane Group Flow (vph)	0	671	0	97	579	48	328	136	67	114	415	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	20.0	0.0	16.0	36.0	18.0	18.0	31.0	31.0	18.0	31.0	0.0
Total Split (%)	0.0%	23.5%	0.0%	18.8%	42.4%	21.2%	21.2%	36.5%	36.5%	21.2%	36.5%	0.0%
Maximum Green (s)		13.0		9.0	29.0	13.0	13.0	26.0	26.0	13.0	26.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		16.2		28.2	28.0	40.3	44.4	34.2	34.2	36.0	27.3	
Actuated g/C Ratio		0.20		0.34	0.35	0.49	0.55	0.42	0.42	0.43	0.34	
v/c Ratio		0.95		0.31	0.47	0.06	0.68	0.15	0.09	0.19	0.61	
Control Delay		57.9		20.7	21.7	3.0	19.4	18.4	5.5	11.2	18.8	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		57.9		20.7	21.7	3.0	19.4	18.4	5.5	11.2	18.8	
LOS		E		C	C	A	B	B	A	B	B	
Approach Delay		57.9			20.3			17.4			17.1	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			C			B			B		
90th %ile Green (s)	13.0			9.0	29.0	10.4	13.0	28.6	28.6	10.4	26.0	
90th %ile Term Code	Max			Max	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	13.0			9.0	29.0	9.0	13.0	30.0	30.0	9.0	26.0	
70th %ile Term Code	Max			Max	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
50th %ile Green (s)	13.0			8.5	28.5	8.1	13.0	30.9	30.9	8.1	26.0	
50th %ile Term Code	Max			Gap	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
30th %ile Green (s)	13.0			7.4	27.4	7.1	13.0	31.9	31.9	7.1	26.0	
30th %ile Term Code	Max			Gap	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
10th %ile Green (s)	13.0			0.0	13.0	0.0	9.6	40.6	40.6	0.0	26.0	
10th %ile Term Code	Max			Skip	Hold	Skip	Gap	Hold	Hold	Skip	MaxR	
Queue Length 50th (ft)	~189			34	118	0	94	47	0	28	111	
Queue Length 95th (ft)	#310			66	164	14	#158	91	26	55	212	
Internal Link Dist (ft)	1752				4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)	708			324	1343	787	487	895	709	678	677	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.95			0.30	0.43	0.06	0.67	0.15	0.09	0.17	0.61	

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 80.7  
 Natural Cycle: 70  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 29.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 75.1%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 85  
 70th %ile Actuated Cycle: 85  
 50th %ile Actuated Cycle: 84.5  
 30th %ile Actuated Cycle: 83.4  
 10th %ile Actuated Cycle: 65.6

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
18 s	31 s	16 s	20 s
ø5	ø6	ø8	
18 s	31 s	36 s	

Lanes, Volumes, Timings  
6: SR 940 & Oak St

2005 Existing Afternoon Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖		↗	↕		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.558			0.288			0.950			0.950		
Satd. Flow (perm)	1039	3486	0	536	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				402			109			141
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	169	578	65	251	273	370	28	0	100	201	0	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	628	71	273	297	402	30	0	109	218	0	141
Lane Group Flow (vph)	184	699	0	273	297	402	30	0	109	218	0	141
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	14.0	39.0	0.0	14.0	39.0	39.0	16.0	0.0	16.0	16.0	0.0	16.0
Total Split (%)	16.5%	45.9%	0.0%	16.5%	45.9%	45.9%	18.8%	0.0%	18.8%	18.8%	0.0%	18.8%
Maximum Green (s)	7.0	32.0		7.0	32.0	32.0	10.0		10.0	10.0		10.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	45.0	35.0		45.0	35.0	35.0	12.0		12.0	12.0		12.0
Actuated g/C Ratio	0.53	0.41		0.53	0.41	0.41	0.14		0.14	0.14		0.14
v/c Ratio	0.29	0.48		0.64	0.20	0.45	0.12		0.34	0.45		0.41
Control Delay	10.0	19.3		16.8	16.5	3.6	33.3		10.4	36.8		10.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	10.0	19.3		16.8	16.5	3.6	33.3		10.4	36.8		10.2
LOS	A	B		B	B	A	C		B	D		B
Approach Delay		17.3			11.3							
Approach LOS		B			B							
Queue Length 50th (ft)	43	136		67	52	0	14		0	55		0
Queue Length 95th (ft)	74	186		110	79	52	39		44	90		50
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	636	1445		429	1457	888	250		317	485		345
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2005 Existing Afternoon Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↗	↖	↕			↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Flt		0.980				0.850		0.995			0.994	
Flt Protected		0.963			0.961		0.950				0.978	
Satd. Flow (prot)	0	2082	0	0	1994	1619	1801	3543	0	0	3441	0
Flt Permitted		0.963			0.961		0.174				0.622	
Satd. Flow (perm)	0	2082	0	0	1994	1619	330	3543	0	0	2189	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				539		3			6	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	222	27	42	83	18	561	22	697	23	551	646	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	241	29	46	90	20	610	24	758	25	599	702	54
Lane Group Flow (vph)	0	316	0	0	110	610	24	783	0	0	1355	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2.9		1	6.1	
Permitted Phases	4	4		8	8	8	2.9	2.9		6.1	6.1	
Detector Phases	4	4		8	8	8	9	2.9		1	6.1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	35.0	0.0	41.0	66.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	15.5%	15.5%	15.5%	9.1%	31.8%	0.0%	37.3%	60.0%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		15.0			15.0	15.0	31.0	33.0			62.0	
Actuated g/C Ratio		0.14			0.14	0.14	0.28	0.30			0.56	
v/c Ratio		1.09			0.40	0.89	0.12	0.74			0.88dl	
Control Delay		124.4			48.4	23.6	28.9	39.3			11.8	
Queue Delay		617.1			0.0	28.7	0.0	2.3			24.5	
Total Delay		741.5			48.4	52.3	28.9	41.7			36.3	
LOS		F			D	D	C	D			D	
Approach Delay		741.5			51.7			41.3			36.3	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			D			D				D
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
50th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
30th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
30th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
10th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
10th %ile Term Code	Max	Max		Hold	Hold	Hold	Max			Hold		
Queue Length 50th (ft)		~249			72	46	12	260				143
Queue Length 95th (ft)		#428			128	#257	32	331				m58
Internal Link Dist (ft)		1072			1692			1410				270
Turn Bay Length (ft)						150	150					
Base Capacity (vph)		289			272	686	200	1065				1680
Starvation Cap Reductn		0			0	0	0	0				378
Spillback Cap Reductn		250			0	104	0	163				0
Storage Cap Reductn		0			0	0	0	0				0
Reduced v/c Ratio		8.10			0.40	1.05	0.12	0.87				1.04

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.24  
 Intersection Signal Delay: 110.7  
 Intersection LOS: F  
 Intersection Capacity Utilization 84.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 110  
 30th %ile Actuated Cycle: 110  
 10th %ile Actuated Cycle: 110  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 1: Commercial Drive & SR 611

#1 ↑ ø9	#2 ↑ ø2	#1 ↓ ø1	#2 ↖ ø5	#1 ↖ ø5	#2 ↖ ø5	#1 ↖ ø5	#2 ↖ ø5
25 s		41 s		34 s		10 s	
#1 ↓ ø6	#2 ↓ ø6	#2 ↖ ø3	#2 ↖ ø7	#1 ↖ ø4	#1 ↖ ø4	#1 ↖ ø8	
25 s		24 s		17 s		17 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗			↕			↕			↕		
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		0	0		1	0		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5		5	5		50	5		50	5	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.900						0.942			0.943	
Fl <sub>t</sub> Protected	0.950				0.965			0.990				
Satd. Flow (prot)	1863	1698	0	0	1819	0	0	3359	0	0	3396	0
Fl <sub>t</sub> Permitted	0.950				0.965			0.558			0.704	
Satd. Flow (perm)	1863	1698	0	0	1819	0	0	1893	0	0	2391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77						220			110	
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	151	203	412	262	101	1	314	595	571	6	573	358
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	164	221	448	285	110	1	341	647	621	7	623	389
Lane Group Flow (vph)	164	669	0	0	396	0	0	1609	0	0	1019	0
Turn Type	Split		custom			pm+pt			Perm			
Protected Phases	7	7		3	3		5 9	5 2 9				6
Permitted Phases				3			5 2 9	5 9		6	6	
Detector Phases	7	7		3	3		5 9	5 2 9		6	6	
Minimum Initial (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Minimum Split (s)	17.0	17.0		17.0	17.0					17.0	17.0	
Total Split (s)	17.0	17.0	0.0	24.0	24.0	0.0	44.0	69.0	0.0	25.0	25.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	21.8%	21.8%	0.0%	40.0%	62.7%	0.0%	22.7%	22.7%	0.0%
Maximum Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Recall Mode	None	None		None	None					Min	Min	
Act Effct Green (s)	15.0	15.0			22.0			65.0			23.0	
Actuated g/C Ratio	0.14	0.14			0.20			0.59			0.21	
v/c Ratio	0.65	2.24			1.09			0.91			1.74	
Control Delay	57.7	592.7			115.0			28.6			364.6	
Queue Delay	0.0	0.0			0.0			60.8			21.9	
Total Delay	57.7	592.7			115.0			89.4			386.5	
LOS	E	F			F			F			F	
Approach Delay		487.4			115.0			89.4			386.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			F			F			F	
90th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
90th %ile Term Code	Max	Max		Max	Max					Max	Max	
70th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
70th %ile Term Code	Max	Max		Max	Max					Max	Max	
50th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
50th %ile Term Code	Max	Max		Max	Max					Max	Max	
30th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
30th %ile Term Code	Max	Max		Max	Max					Max	Max	
10th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
10th %ile Term Code	Max	Max		Max	Max					Max	Max	
Queue Length 50th (ft)	111	~725			~315			384			~533	
Queue Length 95th (ft)	#187	#953			#505			m430			#666	
Internal Link Dist (ft)		1950			1023			270			2032	
Turn Bay Length (ft)												
Base Capacity (vph)	254	298			364			1768			587	
Starvation Cap Reductn	0	0			0			350			0	
Spillback Cap Reductn	0	0			0			0			16	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.65	2.24			1.09			1.13			1.78	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.24  
 Intersection Signal Delay: 256.5      Intersection LOS: F  
 Intersection Capacity Utilization 134.2%      ICU Level of Service H  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 110  
 30th %ile Actuated Cycle: 110  
 10th %ile Actuated Cycle: 110  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR 940 & SR 611


HCM Unsignalized Intersection Capacity Analysis  
 3: SR 314 West & SR 611

2005 Existing Afternoon Peak  
 11/23/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	13	143	352	728	596	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	155	383	791	648	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1827	342	684			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1827	342	684			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	64	76	58			
cM capacity (veh/h)	39	654	905			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	170	646	528	432	252
Volume Left	14	383	0	0	0
Volume Right	155	0	0	0	36
cSH	284	905	1700	1700	1700
Volume to Capacity	0.60	0.42	0.31	0.25	0.15
Queue Length 95th (ft)	89	53	0	0	0
Control Delay (s)	34.7	9.4	0.0	0.0	0.0
Lane LOS	D	A			
Approach Delay (s)	34.7	5.2		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↕	↗	↘	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.971			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3437	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.094	
Satd. Flow (perm)	1770	1583	3437	0	175	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		107	53			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	332	98	982	234	85	654
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	107	1067	254	92	711
Lane Group Flow (vph)	361	107	1321	0	92	711
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	22.0	22.0	45.0	0.0	13.0	58.0
Total Split (%)	27.5%	27.5%	56.3%	0.0%	16.3%	72.5%
Maximum Green (s)	15.0	15.0	37.0		5.0	50.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	18.0	18.0	43.6		54.2	54.0
Actuated g/C Ratio	0.22	0.22	0.54		0.66	0.68
v/c Ratio	0.91	0.24	0.70		0.32	0.30
Control Delay	59.4	7.2	16.1		7.5	5.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	59.4	7.2	16.1		7.5	5.7
LOS	E	A	B		A	A
Approach Delay	47.5		16.1			5.9
Approach LOS	D		B			A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	15.0	15.0	37.0		5.0	50.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	15.0	15.0	37.0		5.0	50.0
70th %ile Term Code	Max	Max	MaxR		Max	MaxR
50th %ile Green (s)	15.0	15.0	37.0		5.0	50.0
50th %ile Term Code	Max	Max	MaxR		Max	MaxR
30th %ile Green (s)	15.0	15.0	37.0		5.0	50.0
30th %ile Term Code	Max	Max	MaxR		Max	MaxR
10th %ile Green (s)	15.0	15.0	50.0		0.0	50.0
10th %ile Term Code	Max	Max	Hold		Skip	MaxR
Queue Length 50th (ft)	176	0	246		14	65
Queue Length 95th (ft)	#333	38	326		29	88
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	398	439	1897		290	2389
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.91	0.24	0.70		0.32	0.30

Intersection Summary

Area Type: Other  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 18.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 67.7%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 80  
 70th %ile Actuated Cycle: 80  
 50th %ile Actuated Cycle: 80  
 30th %ile Actuated Cycle: 80  
 10th %ile Actuated Cycle: 80

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: SR 314 East & SR 611

01	02		
13 s	45 s		
05		08	
58 s		22 s	



Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2005 Existing PM Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.981			0.884			0.972	
Flt Protected	0.950			0.950				0.994			0.964	
Satd. Flow (prot)	1711	1827	0	1770	3472	0	0	1637	0	0	1804	0
Flt Permitted	0.482			0.322				0.961			0.763	
Satd. Flow (perm)	868	1827	0	600	3472	0	0	1582	0	0	1428	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			42			180			11	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	24	337	49	261	380	54	25	3	166	37	3	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	366	53	284	413	59	27	3	180	40	3	11
Lane Group Flow (vph)	26	419	0	284	472	0	0	210	0	0	54	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	33.0	33.0	0.0	14.0	47.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	47.1%	47.1%	0.0%	20.0%	67.1%	0.0%	32.9%	32.9%	0.0%	32.9%	32.9%	0.0%
Maximum Green (s)	26.0	26.0		7.0	40.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0		5.0			5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0			11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0			0	0		0	0	
Act Effct Green (s)	29.0	29.0		43.0	43.0		19.0	19.0		19.0	19.0	
Actuated g/C Ratio	0.41	0.41		0.61	0.61		0.27	0.27		0.27	0.27	
v/c Ratio	0.07	0.55		0.53	0.22		0.37	0.37		0.14	0.14	
Control Delay	13.2	18.4		10.1	5.7		7.3	7.3		17.4	17.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.2	18.4		10.1	5.7		7.3	7.3		17.4	17.4	
LOS	B	B		B	A		A	A		B	B	
Approach Delay		18.0			7.4			7.3			17.4	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	7	127		49	37		10	10		14	14	
Queue Length 95th (ft)	21	209		84	57		57	57		39	39	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	360	765		536	2149			561			396	



HCM Unsignalized Intersection Capacity Analysis  
6: SR 940 & I-380 SB Ramps

2005 Existing PM Peak  
11/23/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	407	93	0	651	94	0	0	0	42	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	442	101	0	708	102	0	0	0	46	0	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	810			543			844	1252	442	1201	1302	405
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810			543			844	1252	442	1201	1302	405
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	68	100	92
cM capacity (veh/h)	812			1022			236	171	563	140	160	595

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	442	101	472	338	93
Volume Left	0	0	0	0	46
Volume Right	0	101	0	102	48
cSH	1700	1700	1700	1700	231
Volume to Capacity	0.26	0.06	0.28	0.20	0.41
Queue Length 95th (ft)	0	0	0	0	46
Control Delay (s)	0.0	0.0	0.0	0.0	30.9
Lane LOS					D
Approach Delay (s)	0.0		0.0		30.9
Approach LOS					D

Intersection Summary

Average Delay	2.0
Intersection Capacity Utilization	33.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
9: SR 940 & I-380 NB Ramps

2005 Existing PM Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.835					0.950					
Satd. Flow (perm)	0	2857	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						80			193			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	50	414	0	0	575	74	170	0	178	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	450	0	0	625	80	185	0	193	0	0	0
Lane Group Flow (vph)	0	504	0	0	625	80	185	0	193	0	0	0
Turn Type	Perm					Perm	custom		custom			
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.5	66.5	0.0	0.0	66.5	66.5	23.5	0.0	23.5	0.0	0.0	0.0
Total Split (%)	73.9%	73.9%	0.0%	0.0%	73.9%	73.9%	26.1%	0.0%	26.1%	0.0%	0.0%	0.0%
Maximum Green (s)	60.0	60.0			60.0	60.0	17.0		17.0			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.5			62.5	62.5	19.5		19.5			
Actuated g/C Ratio		0.69			0.69	0.69	0.22		0.22			
v/c Ratio		0.25			0.26	0.07	0.52		0.41			
Control Delay		5.5			5.5	1.2	37.1		7.5			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		5.5			5.5	1.2	37.1		7.5			
LOS		A			A	A	D		A			
Approach Delay		5.5			5.0							
Approach LOS		A			A							
Queue Length 50th (ft)		47			60	0	93		0			
Queue Length 95th (ft)		67			81	12	160		54			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1984			2376	1124	358		471			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.25			0.26	0.07	0.52		0.41			

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.52
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	48.2%
ICU Level of Service	A
Analysis Period (min)	15

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

ø2	ø4
23.5 s	66.5 s
	ø8
	66.5 s

HCM Unsignalized Intersection Capacity Analysis  
 3: 940-WB Ramps & SR 0314

2005 Existing PM Peak  
 11/23/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↕	↕	↗
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	12	58	95	58	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	13	63	103	63	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	1202					
pX, platoon unblocked						
vC, conflicting volume	292	63	63			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	292	63	63			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	96			
cM capacity (veh/h)	670	1002	1540			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	13	42	124	63	43
Volume Left	1	0	42	21	0	0
Volume Right	0	13	0	0	0	43
cSH	670	1002	1540	1540	1700	1700
Volume to Capacity	0.00	0.01	0.04	0.04	0.04	0.03
Queue Length 95th (ft)	0	1	3	3	0	0
Control Delay (s)	10.4	8.6	7.4	1.5	0.0	0.0
Lane LOS	B	A	A	A		
Approach Delay (s)	8.8		3.0		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			20.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 4: 940-EB Ramps & SR 0314

2005 Existing PM Peak  
 11/23/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↶	↷	↶	↕	↕	↷	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	60	50	25	93	45	13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	65	54	27	101	49	14	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)				460			
pX, platoon unblocked							
vC, conflicting volume	154	49	49				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	154	49	49				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	92	95	98				
cM capacity (veh/h)	808	1009	1556				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	65	54	27	51	51	49	14
Volume Left	65	0	27	0	0	0	0
Volume Right	0	54	0	0	0	0	14
cSH	808	1009	1556	1700	1700	1700	1700
Volume to Capacity	0.08	0.05	0.02	0.03	0.03	0.03	0.01
Queue Length 95th (ft)	7	4	1	0	0	0	0
Control Delay (s)	9.8	8.8	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	A	A				
Approach Delay (s)	9.4		1.6			0.0	
Approach LOS	A						
Intersection Summary							
Average Delay			4.2				
Intersection Capacity Utilization			18.1%		ICU Level of Service		A
Analysis Period (min)			15				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↘	↑↑	↗	↘	↑	↗	↘	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.997				0.850			0.850		0.894	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3529	0	1770	3539	1583	1770	2111	1583	1829	1721	0
Flt Permitted				0.200			0.699			0.730		
Satd. Flow (perm)	0	3529	0	373	3539	1583	1302	2111	1583	1405	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				33			99		63	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	465	9	83	385	30	150	39	91	41	24	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	505	10	90	418	33	163	42	99	45	26	63
Lane Group Flow (vph)	0	515	0	90	418	33	163	42	99	45	89	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	20.0	0.0	16.0	36.0	18.0	18.0	31.0	31.0	18.0	31.0	0.0
Total Split (%)	0.0%	23.5%	0.0%	18.8%	42.4%	21.2%	21.2%	36.5%	36.5%	21.2%	36.5%	0.0%
Maximum Green (s)		13.0		9.0	29.0	13.0	13.0	26.0	26.0	13.0	26.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		15.5		26.8	26.7	37.3	38.9	31.2	31.2	33.4	28.4	
Actuated g/C Ratio		0.21		0.35	0.36	0.48	0.51	0.42	0.42	0.43	0.38	
v/c Ratio		0.70		0.28	0.33	0.04	0.23	0.05	0.14	0.07	0.13	
Control Delay		35.9		19.2	18.5	3.8	11.3	16.8	4.6	10.5	9.3	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		35.9		19.2	18.5	3.8	11.3	16.8	4.6	10.5	9.3	
LOS		D		B	B	A	B	B	A	B	A	
Approach Delay		35.9			17.7			9.9			9.7	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			B			A			A	
90th %ile Green (s)		13.0		9.0	29.0	7.8	13.0	31.2	31.2	7.8	26.0	
90th %ile Term Code		Max		Max	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)		13.0		9.0	29.0	7.0	11.3	30.3	30.3	7.0	26.0	
70th %ile Term Code		Max		Max	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
50th %ile Green (s)		13.0		8.1	28.1	6.4	9.8	29.4	29.4	6.4	26.0	
50th %ile Term Code		Max		Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
30th %ile Green (s)		13.0		7.0	27.0	5.9	8.4	28.5	28.5	5.9	26.0	
30th %ile Term Code		Max		Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
10th %ile Green (s)		8.9		0.0	8.9	0.0	0.0	26.0	26.0	0.0	26.0	
10th %ile Term Code		Gap		Skip	Hold	Skip	Skip	MaxR	MaxR	Skip	MaxR	
Queue Length 50th (ft)		129		29	75	0	41	13	0	11	9	
Queue Length 95th (ft)		#200		63	117	13	75	34	30	26	42	
Internal Link Dist (ft)		1752			4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)		775		343	1435	794	717	879	717	710	691	
Starvation Cap Reductn		0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0		0	0	0	0	0	0	0	0	
Storage Cap Reductn		0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.66		0.26	0.29	0.04	0.23	0.05	0.14	0.06	0.13	

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 74.9  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 21.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 42.7%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 85  
 70th %ile Actuated Cycle: 83.3  
 50th %ile Actuated Cycle: 80.9  
 30th %ile Actuated Cycle: 78.4  
 10th %ile Actuated Cycle: 46.9

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
18 s	31 s	16 s	20 s
ø5	ø6	ø8	
18 s	31 s	36 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.983				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.499			0.387			0.950			0.950		
Satd. Flow (perm)	930	3479	0	721	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				184			138			114
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	145	434	55	98	341	169	36	0	127	167	0	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	472	60	107	371	184	39	0	138	182	0	114
Lane Group Flow (vph)	158	532	0	107	371	184	39	0	138	182	0	114
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	14.0	39.0	0.0	14.0	39.0	39.0	16.0	0.0	16.0	16.0	0.0	16.0
Total Split (%)	16.5%	45.9%	0.0%	16.5%	45.9%	45.9%	18.8%	0.0%	18.8%	18.8%	0.0%	18.8%
Maximum Green (s)	7.0	32.0		7.0	32.0	32.0	10.0		10.0	10.0		10.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	45.0	35.0		45.0	35.0	35.0	12.0		12.0	12.0		12.0
Actuated g/C Ratio	0.53	0.41		0.53	0.41	0.41	0.14		0.14	0.14		0.14
v/c Ratio	0.27	0.37		0.21	0.25	0.24	0.16		0.40	0.38		0.36
Control Delay	9.8	17.5		9.3	17.0	3.5	33.9		10.2	35.6		10.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	9.8	17.5		9.3	17.0	3.5	33.9		10.2	35.6		10.3
LOS	A	B		A	B	A	C		B	D		B
Approach Delay		15.8			12.0							
Approach LOS		B			B							
Queue Length 50th (ft)	36	96		24	66	0	19		0	45		0
Queue Length 95th (ft)	65	136		46	97	37	47		50	76		45
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	591	1444		505	1457	760	250		342	485		321
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0	0	0		0	0		0
Storage Cap Reductn	0	0		0	0	0	0		0	0		0
Reduced v/c Ratio	0.27	0.37		0.21	0.25	0.24	0.16		0.40	0.38		0.36

Intersection Summary

Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.40  
 Intersection Signal Delay: 16.0 Intersection LOS: B  
 Intersection Capacity Utilization 36.4% ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 6: SR 940 & Oak St

ø2	ø6	ø3	ø4
16 s	16 s	14 s	39 s
		ø7	ø8
		14 s	39 s

Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2005 Existing PM Peak  
11/23/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Frt		0.965				0.850		0.996			0.994	
Flt Protected		0.971			0.960		0.950				0.981	
Satd. Flow (prot)	0	2059	0	0	1992	1619	1801	3547	0	0	3459	0
Flt Permitted		0.971			0.960		0.174				0.608	
Satd. Flow (perm)	0	2059	0	0	1992	1619	330	3547	0	0	2144	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				396		3			7	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	105	26	46	44	9	364	19	659	19	336	487	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	114	28	50	48	10	396	21	716	21	365	529	40
Lane Group Flow (vph)	0	192	0	0	58	396	21	737	0	0	934	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2.9		1	6.1	
Permitted Phases	4	4		8	8	8	2.9	2.9		6.1	6.1	
Detector Phases	4	4		8	8	8	9	2.9		1	6.1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	35.0	0.0	41.0	66.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	15.5%	15.5%	15.5%	9.1%	31.8%	0.0%	37.3%	60.0%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		15.0			13.9	13.9	31.0	33.0			62.0	
Actuated g/C Ratio		0.14			0.13	0.13	0.28	0.30			0.57	
v/c Ratio		0.65			0.23	0.72	0.10	0.68			0.55	
Control Delay		53.0			44.9	12.5	28.6	37.3			8.3	
Queue Delay		3.1			0.0	0.5	0.0	1.1			0.7	
Total Delay		56.1			44.9	13.0	28.6	38.4			9.0	
LOS		E			D	B	C	D			A	
Approach Delay		56.1			17.1			38.2			9.0	

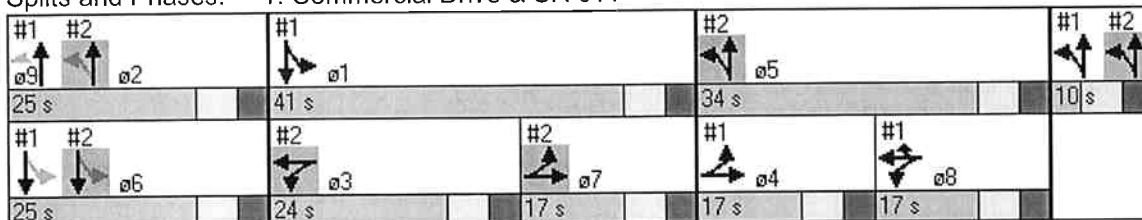


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			B			D			A		
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
50th %ile Term Code	Max	Max		Hold	Hold	Hold	Max			Hold		
30th %ile Green (s)	10.0	10.0		8.3	8.3	8.3	3.0			34.0		
30th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	10.0	10.0		6.5	6.5	6.5	3.0			34.0		
10th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
Queue Length 50th (ft)		122			37	0	11	240				71
Queue Length 95th (ft)		199			77	94	30	308				m58
Internal Link Dist (ft)		1072			1692			1410				270
Turn Bay Length (ft)						150	150					
Base Capacity (vph)		295			275	564	202	1076				1694
Starvation Cap Reductn		0			0	0	0	0				398
Spillback Cap Reductn		43			0	24	0	148				0
Storage Cap Reductn		0			0	0	0	0				0
Reduced v/c Ratio		0.76			0.21	0.73	0.10	0.79				0.72

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 109  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.02  
 Intersection Signal Delay: 23.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 67.2%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 110  
 30th %ile Actuated Cycle: 108.3  
 10th %ile Actuated Cycle: 106.5  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 1: Commercial Drive & SR 611**



Lanes, Volumes, Timings  
2: SR 940 & SR 611

2005 Existing PM Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		0	0		1	0		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5		5	5		50	5		50	5	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Flt		0.913			0.999			0.933			0.941	
Flt Protected	0.950				0.968			0.987				
Satd. Flow (prot)	1863	1731	0	0	1821	0	0	3316	0	0	3389	0
Flt Permitted	0.950				0.968			0.549			0.733	
Satd. Flow (perm)	1863	1731	0	0	1821	0	0	1845	0	0	2484	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53						325			127	
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	125	221	306	231	112	4	303	320	505	4	323	214
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	136	240	333	251	122	4	329	348	549	4	351	233
Lane Group Flow (vph)	136	573	0	0	377	0	0	1226	0	0	588	0
Turn Type	Split		custom			pm+pt				Perm		
Protected Phases	7	7		3	3		5 9	5 2 9				6
Permitted Phases				3			5 2 9	5 9		6	6	
Detector Phases	7	7		3	3		5 9	5 2 9		6	6	
Minimum Initial (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Minimum Split (s)	17.0	17.0		17.0	17.0					17.0	17.0	
Total Split (s)	17.0	17.0	0.0	24.0	24.0	0.0	44.0	69.0	0.0	25.0	25.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	21.8%	21.8%	0.0%	40.0%	62.7%	0.0%	22.7%	22.7%	0.0%
Maximum Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Recall Mode	None	None		None	None					Min	Min	
Act Effct Green (s)	15.0	15.0			22.0			64.0			23.0	
Actuated g/C Ratio	0.14	0.14			0.20			0.59			0.21	
v/c Ratio	0.53	2.02			1.02			0.69			0.94	
Control Delay	52.3	494.5			97.4			22.3			58.1	
Queue Delay	0.0	0.0			0.0			1.6			0.0	
Total Delay	52.3	494.5			97.4			23.9			58.1	
LOS	D	F			F			C			E	
Approach Delay		409.7			97.4			23.9			58.1	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			C			E		
90th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
90th %ile Term Code	Max	Max		Max	Max					Max	Max	
70th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
70th %ile Term Code	Max	Max		Max	Max					Max	Max	
50th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
50th %ile Term Code	Max	Max		Max	Max					Max	Max	
30th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
30th %ile Term Code	Max	Max		Max	Max					Max	Max	
10th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
10th %ile Term Code	Max	Max		Max	Max					Max	Max	
Queue Length 50th (ft)	91	~609			~287			196			175	
Queue Length 95th (ft)	155	#827			#474			225			#290	
Internal Link Dist (ft)		1950			1023			270			2032	
Turn Bay Length (ft)												
Base Capacity (vph)	256	284			368			1769			625	
Starvation Cap Reductn	0	0			0			347			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.53	2.02			1.02			0.86			0.94	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 109  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.02  
 Intersection Signal Delay: 134.7  
 Intersection LOS: F  
 Intersection Capacity Utilization 107.5%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 110  
 30th %ile Actuated Cycle: 108.3  
 10th %ile Actuated Cycle: 106.5  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.












**Splits and Phases: 2: SR 940 & SR 611**

#1 ↑ ø9 25 s	#2 ↑ ø2 25 s	#1 ↘ ø1 41 s	#2 ↙ ø5 34 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s
#1 ↓ ø6 25 s	#2 ↓ ø6 25 s	#2 ↙ ø3 24 s	#2 ↘ ø7 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s	#1 ↙ ø4 17 s	#2 ↘ ø8 17 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	34	165	147	652	377	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	179	160	709	410	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1097	218	437			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1097	218	437			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	77	86			
cM capacity (veh/h)	178	786	1119			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	216	396	472	273	164	
Volume Left	37	160	0	0	0	
Volume Right	179	0	0	0	27	
cSH	496	1119	1700	1700	1700	
Volume to Capacity	0.44	0.14	0.28	0.16	0.10	
Queue Length 95th (ft)	55	12	0	0	0	
Control Delay (s)	17.8	4.4	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	17.8	2.0		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization		55.6%		ICU Level of Service		B
Analysis Period (min)			15			



						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.964			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3412	0	1770	3539
Flt Permitted	0.950				0.159	
Satd. Flow (perm)	1770	1583	3412	0	296	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		50	79			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	126	46	753	241	135	407
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	50	818	262	147	442
Lane Group Flow (vph)	137	50	1080	0	147	442
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	22.0	22.0	45.0	0.0	13.0	58.0
Total Split (%)	27.5%	27.5%	56.3%	0.0%	16.3%	72.5%
Maximum Green (s)	15.0	15.0	37.0		5.0	50.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.2	14.2	44.9		57.9	58.7
Actuated g/C Ratio	0.18	0.18	0.58		0.75	0.76
v/c Ratio	0.44	0.16	0.54		0.37	0.16
Control Delay	31.9	9.3	11.5		6.6	3.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	31.9	9.3	11.5		6.6	3.8
LOS	C	A	B		A	A
Approach Delay	25.8		11.5			4.5
Approach LOS	C		B			A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	15.0	15.0	37.0		5.0	50.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	13.0	13.0	37.0		5.0	50.0
70th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
50th %ile Green (s)	11.1	11.1	37.0		5.0	50.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	9.2	9.2	37.0		5.0	50.0
30th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
10th %ile Green (s)	0.0	0.0	56.1		5.0	69.1
10th %ile Term Code	Skip	Skip	Dwell		Max	Dwell
Queue Length 50th (ft)	58	0	153		18	30
Queue Length 95th (ft)	108	26	235		41	53
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	383	382	2018		394	2693
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.36	0.13	0.54		0.37	0.16

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	77.1
Natural Cycle:	60
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization:	53.0%
ICU Level of Service:	A
Analysis Period (min):	15
90th %ile Actuated Cycle:	80
70th %ile Actuated Cycle:	78
50th %ile Actuated Cycle:	76.1
30th %ile Actuated Cycle:	74.2
10th %ile Actuated Cycle:	77.1

Splits and Phases: 5: SR 314 East & SR 611

ø1	ø2		
13 s	45 s		
ø6		ø8	
58 s		22 s	

Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2005 Existing SAT Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↕			↕			↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.974			0.981			0.884			0.974	
Flt Protected	0.950			0.950				0.994			0.967	
Satd. Flow (prot)	1711	1814	0	1770	3472	0	0	1637	0	0	1813	0
Flt Permitted	0.528			0.347				0.960			0.726	
Satd. Flow (perm)	951	1814	0	646	3472	0	0	1581	0	0	1361	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			42			224			11	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	12	298	63	254	304	43	29	4	206	36	7	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	324	68	276	330	47	32	4	224	39	8	11
Lane Group Flow (vph)	13	392	0	276	377	0	0	260	0	0	58	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	33.0	33.0	0.0	14.0	47.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	47.1%	47.1%	0.0%	20.0%	67.1%	0.0%	32.9%	32.9%	0.0%	32.9%	32.9%	0.0%
Maximum Green (s)	26.0	26.0		7.0	40.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	29.0	29.0		43.0	43.0			19.0			19.0	
Actuated g/C Ratio	0.41	0.41		0.61	0.61			0.27			0.27	
v/c Ratio	0.03	0.51		0.50	0.18			0.44			0.15	
Control Delay	12.6	17.5		15.2	10.1			7.4			17.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.6	17.5		15.2	10.1			7.4			17.8	
LOS	B	B		B	B			A			B	
Approach Delay		17.3			12.3			7.4			17.8	
Approach LOS		B			B			A			B	
Queue Length 50th (ft)	3	115		88	56			12			15	
Queue Length 95th (ft)	13	191		147	86			64			42	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	394	762		557	2149			592			377	



HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2005 Existing SAT Peak  
 11/23/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	409	131	0	558	64	0	0	0	37	0	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	445	142	0	607	70	0	0	0	40	0	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	676			587			795	1121	445	1086	1228	338
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	676			587			795	1121	445	1086	1228	338
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	76	100	93
cM capacity (veh/h)	911			984			259	205	561	171	177	658

Direction Lane #	EB1	EB2	WB1	WB2	SB1
Volume Total	445	142	404	272	87
Volume Left	0	0	0	0	40
Volume Right	0	142	0	70	47
cSH	1700	1700	1700	1700	284
Volume to Capacity	0.26	0.08	0.24	0.16	0.31
Queue Length 95th (ft)	0	0	0	0	32
Control Delay (s)	0.0	0.0	0.0	0.0	23.2
Lane LOS					C
Approach Delay (s)	0.0		0.0		23.2
Approach LOS					C

Intersection Summary		
Average Delay		1.5
Intersection Capacity Utilization	32.9%	ICU Level of Service
Analysis Period (min)		15
		A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.850			0.850			
Fl <sub>t</sub> Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Fl <sub>t</sub> Permitted		0.853					0.950					
Satd. Flow (perm)	0	2918	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						47			149			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	48	401	0	0	492	43	130	0	137	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	436	0	0	535	47	141	0	149	0	0	0
Lane Group Flow (vph)	0	488	0	0	535	47	141	0	149	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	35.5	35.5	0.0	0.0	35.5	35.5	34.5	0.0	34.5	0.0	0.0	0.0
Total Split (%)	50.7%	50.7%	0.0%	0.0%	50.7%	50.7%	49.3%	0.0%	49.3%	0.0%	0.0%	0.0%
Maximum Green (s)	29.0	29.0			29.0	29.0	28.0		28.0			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		31.5			31.5	31.5	30.5		30.5			
Actuated g/C Ratio		0.45			0.45	0.45	0.44		0.44			
v/c Ratio		0.37			0.35	0.06	0.20		0.20			
Control Delay		17.6			13.4	4.0	13.1		3.2			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		17.6			13.4	4.0	13.1		3.2			
LOS		B			B	A	B		A			
Approach Delay		17.6			12.6							
Approach LOS		B			B							
Queue Length 50th (ft)		91			75	0	36		0			
Queue Length 95th (ft)		118			109	16	70		29			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1313			1539	738	720		728			





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	12	35	81	38	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	13	38	88	41	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1202		
pX, platoon unblocked						
vC, conflicting volume	205	41	41			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	205	41	41			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	98			
cM capacity (veh/h)	764	1030	1568			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	13	25	101	41	35
Volume Left	1	0	25	13	0	0
Volume Right	0	13	0	0	0	35
cSH	764	1030	1568	1568	1700	1700
Volume to Capacity	0.00	0.01	0.02	0.02	0.02	0.02
Queue Length 95th (ft)	0	1	2	2	0	0
Control Delay (s)	9.7	8.5	7.4	1.1	0.0	0.0
Lane LOS	A	A	A	A		
Approach Delay (s)	8.6		2.3		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			19.8%		ICU Level of Service	A
Analysis Period (min)			15			





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↘	↙	↑↑	↑	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	56	50	19	60	41	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	54	21	65	45	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				460		
pX, platoon unblocked						
vC, conflicting volume	118	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	45	45			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	95	99			
cM capacity (veh/h)	853	1016	1562			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	61	54	21	33	33	45	10
Volume Left	61	0	21	0	0	0	0
Volume Right	0	54	0	0	0	0	10
cSH	853	1016	1562	1700	1700	1700	1700
Volume to Capacity	0.07	0.05	0.01	0.02	0.02	0.03	0.01
Queue Length 95th (ft)	6	4	1	0	0	0	0
Control Delay (s)	9.5	8.7	7.3	0.0	0.0	0.0	0.0
Lane LOS	A	A	A				
Approach Delay (s)	9.2		1.8			0.0	
Approach LOS	A						

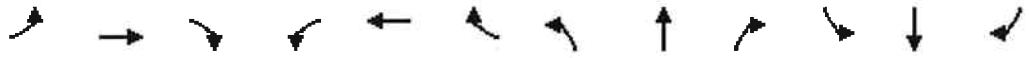
Intersection Summary			
Average Delay		4.7	
Intersection Capacity Utilization	17.7%		ICU Level of Service A
Analysis Period (min)		15	

Lanes, Volumes, Timings  
3: SR 940 & Industrial Dr

2005 Existing SAT Peak  
11/23/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↘	↑↑	↗	↘	↑	↗	↘	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.995				0.850			0.850		0.886	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3522	0	1770	3539	1583	1770	2111	1583	1829	1705	0
Flt Permitted				0.417			0.714			0.732		
Satd. Flow (perm)	0	3522	0	777	3539	1583	1330	2111	1583	1409	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				24			88		50	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	350	11	56	320	22	146	35	81	23	15	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	380	12	61	348	24	159	38	88	25	16	50
Lane Group Flow (vph)	0	392	0	61	348	24	159	38	88	25	66	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	37.0	0.0	16.0	53.0	16.0	16.0	21.0	21.0	16.0	21.0	0.0
Total Split (%)	0.0%	41.1%	0.0%	17.8%	58.9%	17.8%	17.8%	23.3%	23.3%	17.8%	23.3%	0.0%
Maximum Green (s)		30.0		9.0	46.0	11.0	11.0	16.0	16.0	11.0	16.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		15.4		23.0	22.7	32.3	28.8	23.6	23.6	23.0	18.6	
Actuated g/C Ratio		0.25		0.35	0.37	0.50	0.46	0.39	0.39	0.35	0.31	
v/c Ratio		0.44		0.14	0.26	0.03	0.23	0.05	0.13	0.05	0.12	
Control Delay		22.9		13.4	13.4	2.6	12.7	19.0	6.1	12.5	11.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		22.9		13.4	13.4	2.6	12.7	19.0	6.1	12.5	11.0	
LOS		C		B	B	A	B	B	A	B	B	
Approach Delay		22.9			12.8			11.5			11.4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			B			B		
90th %ile Green (s)	17.2			8.7	32.9	7.2	11.0	19.8	19.8	7.2	16.0	
90th %ile Term Code	Gap			Gap	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	14.7			7.6	29.3	6.4	11.0	20.6	20.6	6.4	16.0	
70th %ile Term Code	Gap			Gap	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
50th %ile Green (s)	12.8			6.9	26.7	6.0	9.5	19.5	19.5	6.0	16.0	
50th %ile Term Code	Gap			Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
30th %ile Green (s)	9.5			0.0	9.5	0.0	7.5	28.5	28.5	0.0	16.0	
30th %ile Term Code	Gap			Skip	Hold	Skip	Gap	Hold	Hold	Skip	MaxR	
10th %ile Green (s)	6.8			0.0	6.8	0.0	0.0	16.0	16.0	0.0	16.0	
10th %ile Term Code	Gap			Skip	Hold	Skip	Skip	MaxR	MaxR	Skip	MaxR	
Queue Length 50th (ft)	75			15	47	0	38	12	0	6	5	
Queue Length 95th (ft)	121			35	74	8	84	35	32	20	36	
Internal Link Dist (ft)	1752			4920			2736			2592		
Turn Bay Length (ft)												
Base Capacity (vph)	1523			450	2032	811	671	819	668	609	556	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26			0.14	0.17	0.03	0.24	0.05	0.13	0.04	0.12	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 60.8  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 15.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 38.1%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 76.9  
 70th %ile Actuated Cycle: 73.3  
 50th %ile Actuated Cycle: 69.2  
 30th %ile Actuated Cycle: 50  
 10th %ile Actuated Cycle: 34.8

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
16 s	21 s	16 s	37 s
ø5	ø6	ø8	
16 s	21 s	53 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕	↗	↘		↗	↘↗		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3483	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.563			0.509			0.950			0.950		
Satd. Flow (perm)	1049	3483	0	948	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes		Yes			Yes	
Satd. Flow (RTOR)		18				171			212			125
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	126	300	35	60	270	157	55	0	195	184	0	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	326	38	65	293	171	60	0	212	200	0	125
Lane Group Flow (vph)	137	364	0	65	293	171	60	0	212	200	0	125
Turn Type	pm+pt			pm+pt		Perm	Prot		custom	Prot		custom
Protected Phases	7	4		3	8		2		2	6		6
Permitted Phases	4			8		8						
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	14.0	44.0	0.0	14.0	44.0	44.0	16.0	0.0	16.0	16.0	0.0	16.0
Total Split (%)	15.6%	48.9%	0.0%	15.6%	48.9%	48.9%	17.8%	0.0%	17.8%	17.8%	0.0%	17.8%
Maximum Green (s)	7.0	37.0		7.0	37.0	37.0	10.0		10.0	10.0		10.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	50.0	40.0		50.0	40.0	40.0	12.0		12.0	12.0		12.0
Actuated g/C Ratio	0.56	0.44		0.56	0.44	0.44	0.13		0.13	0.13		0.13
v/c Ratio	0.21	0.23		0.11	0.19	0.21	0.25		0.54	0.44		0.39
Control Delay	8.8	15.2		8.0	15.5	3.2	38.2		10.9	39.2		10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	8.8	15.2		8.0	15.5	3.2	38.2		10.9	39.2		10.9
LOS	A	B		A	B	A	D		B	D		B
Approach Delay		13.4			10.6							
Approach LOS		B			B							
Queue Length 50th (ft)	31	61		14	51	0	31		0	54		0
Queue Length 95th (ft)	56	91		30	77	34	68		62	88		49
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	663	1558		618	1573	799	236		395	458		319
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0	0	0		0	0		0
Storage Cap Reductn	0	0		0	0	0	0		0	0		0
Reduced v/c Ratio	0.21	0.23		0.11	0.19	0.21	0.25		0.54	0.44		0.39

**Intersection Summary**

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 16.1

Intersection LOS: B

Intersection Capacity Utilization 36.7%

ICU Level of Service A

Analysis Period (min) 15

**Splits and Phases: 6: SR 940 & Oak St**

Phase	Split (s)	Phase	Split (s)
Ø2 (Left Turn)	16 s	Ø6 (Left Turn)	16 s
Ø3 (Left Turn)	14 s	Ø4 (Through)	44 s
Ø7 (Left Turn)	14 s	Ø8 (Through)	44 s

Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2005 Existing SAT Peak  
11/23/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95
Flt		0.975				0.850		0.993			0.997	
Flt Protected		0.969			0.960		0.950				0.977	
Satd. Flow (prot)	0	2070	0	0	1992	1619	1801	3533	0	0	3445	0
Flt Permitted		0.969			0.960		0.215				0.630	
Satd. Flow (perm)	0	2070	0	0	1992	1619	408	3533	0	0	2221	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				334		5			3	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	38	11	11	48	10	307	7	379	18	300	326	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	41	12	12	52	11	334	8	412	20	326	354	15
Lane Group Flow (vph)	0	65	0	0	63	334	8	432	0	0	695	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2 9		1	6 1	
Permitted Phases	4	4		8	8	8	2 9	2 9		6 1	6 1	
Detector Phases	4	4		8	8	8	9	2 9		1	6 1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	35.0	0.0	41.0	66.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	15.5%	15.5%	15.5%	9.1%	31.8%	0.0%	37.3%	60.0%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		13.7			14.8	14.8	30.6	32.6			61.8	
Actuated g/C Ratio		0.13			0.14	0.14	0.29	0.31			0.59	
v/c Ratio		0.23			0.22	0.65	0.04	0.39			0.40	
Control Delay		39.9			44.7	11.3	27.6	30.3			8.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0			0.2	
Total Delay		39.9			44.7	11.3	27.6	30.3			8.5	
LOS		D			D	B	C	C			A	
Approach Delay		39.9			16.6			30.3			8.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D		B					C		A		
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
50th %ile Green (s)	9.3	9.3		9.8	9.8	9.8	3.0			34.0		
50th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
30th %ile Green (s)	8.0	8.0		8.5	8.5	8.5	3.0			34.0		
30th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	0.0	0.0		10.4	10.4	10.4	3.0			34.0		
10th %ile Term Code	Skip	Skip		Hold	Hold	Hold	Max			Hold		
Queue Length 50th (ft)	36			40		0	4	124		61		
Queue Length 95th (ft)	77			82		85	16	173		m56		
Internal Link Dist (ft)	1072			1692				1410		270		
Turn Bay Length (ft)						150	150					
Base Capacity (vph)	304			287		519	225	1116		1769		
Starvation Cap Reductn	0			0		0	0	0		395		
Spillback Cap Reductn	0			0		0	0	0		0		
Storage Cap Reductn	0			0		0	0	0		0		
Reduced v/c Ratio	0.21			0.22		0.64	0.04	0.39		0.51		

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 105.3  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.62  
 Intersection Signal Delay: 17.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 47.6%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.1  
 30th %ile Actuated Cycle: 106.5  
 10th %ile Actuated Cycle: 90.9

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611

#1 ↑ ø9	#2 ↑ ø2	#1 ↘ ø1	#2 ↘ ø5	#1 ↘ ø4	#1 ↘ ø8	#1 ↘ ø6	#2 ↘ ø3	#2 ↘ ø7	#1 ↘ ø4	#1 ↘ ø8
25 s	25 s	41 s	34 s	17 s	17 s	25 s	24 s	17 s	17 s	17 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↕			↕			↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		0	0		1	0		0	0		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5		5	5		50	5		50	5	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>		0.915						0.935			0.931	
Fl <sub>t</sub> Protected	0.950				0.968			0.985			0.999	
Satd. Flow (prot)	1863	1736	0	0	1823	0	0	3317	0	0	3349	0
Fl <sub>t</sub> Permitted	0.950				0.968			0.593			0.914	
Satd. Flow (perm)	1863	1736	0	0	1823	0	0	1997	0	0	3064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50						307			178	
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	112	188	246	203	102	1	223	187	314	8	191	170
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	122	204	267	221	111	1	242	203	341	9	208	185
Lane Group Flow (vph)	122	471	0	0	333	0	0	786	0	0	402	0
Turn Type	Split		custom			pm+pt				Perm		
Protected Phases	7	7		3	3		5 2 9	5 2 9				6
Permitted Phases				3			5 2 9	5 9		6	6	
Detector Phases	7	7		3	3		5 9	5 2 9		6	6	
Minimum Initial (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Minimum Split (s)	17.0	17.0		17.0	17.0					17.0	17.0	
Total Split (s)	17.0	17.0	0.0	24.0	24.0	0.0	44.0	69.0	0.0	25.0	25.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	21.8%	21.8%	0.0%	40.0%	62.7%	0.0%	22.7%	22.7%	0.0%
Maximum Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0					3.0	3.0	
Lead/Lag	Lag	Lag		Lead	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	4.0	4.0		4.0	4.0					4.0	4.0	
Recall Mode	None	None		None	None					Min	Min	
Act Effct Green (s)	15.1	15.1			22.1			60.1			22.5	
Actuated g/C Ratio	0.14	0.14			0.21			0.57			0.21	
v/c Ratio	0.46	1.62			0.87			0.45			0.51	
Control Delay	49.3	321.1			65.0			6.7			22.9	
Queue Delay	0.0	0.0			0.0			0.2			0.0	
Total Delay	49.3	321.1			65.0			6.9			22.9	
LOS	D	F			E			A			C	
Approach Delay		265.2			65.0			6.9			22.9	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			E			A			C		
90th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
90th %ile Term Code	Max	Max		Max	Max					Max	Max	
70th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
70th %ile Term Code	Max	Max		Max	Max					Max	Max	
50th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
50th %ile Term Code	Max	Max		Max	Max					Max	Max	
30th %ile Green (s)	10.0	10.0		17.0	17.0					18.0	18.0	
30th %ile Term Code	Max	Max		Max	Max					Max	Max	
10th %ile Green (s)	10.0	10.0		17.0	17.0					15.5	15.5	
10th %ile Term Code	Max	Max		Max	Max					Gap	Gap	
Queue Length 50th (ft)	80	~455			230			15			71	
Queue Length 95th (ft)	141	#665			#402			10			122	
Internal Link Dist (ft)		1950			1023			270			2032	
Turn Bay Length (ft)												
Base Capacity (vph)	267	291			383			1771			811	
Starvation Cap Reductn	0	0			0			340			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.46	1.62			0.87			0.55			0.50	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 105.3  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.62  
 Intersection Signal Delay: 91.5  
 Intersection LOS: F  
 Intersection Capacity Utilization 84.0%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.1  
 30th %ile Actuated Cycle: 106.5  
 10th %ile Actuated Cycle: 90.9  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 2: SR 940 & SR 611**

#1 #2 #9 #2	#1 #1	#2 #5	#1 #2
25 s	41 s	34 s	10 s
#1 #2 #6	#2 #3	#2 #7	#1 #1 #4 #8
25 s	24 s	17 s	17 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	8	81	102	545	389	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	88	111	592	423	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	953	224	448			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	953	224	448			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	89	90			
cM capacity (veh/h)	231	779	1109			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	97	308	395	282	166	
Volume Left	9	111	0	0	0	
Volume Right	88	0	0	0	25	
cSH	643	1109	1700	1700	1700	
Volume to Capacity	0.15	0.10	0.23	0.17	0.10	
Queue Length 95th (ft)	13	8	0	0	0	
Control Delay (s)	11.6	3.7	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	11.6	1.6		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization		45.0%		ICU Level of Service		A
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕	↷	↶	↷
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.980			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3468	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.223	
Satd. Flow (perm)	1770	1583	3468	0	415	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		34	31			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	78	31	616	95	51	419
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	34	670	103	55	455
Lane Group Flow (vph)	85	34	773	0	55	455
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	22.0	22.0	30.0	0.0	13.0	43.0
Total Split (%)	33.8%	33.8%	46.2%	0.0%	20.0%	66.2%
Maximum Green (s)	15.0	15.0	22.0		5.0	35.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	13.1	13.1	45.5		55.3	55.3
Actuated g/C Ratio	0.17	0.17	0.61		0.69	0.74
v/c Ratio	0.28	0.11	0.36		0.12	0.17
Control Delay	22.3	8.5	9.4		4.6	3.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	22.3	8.5	9.4		4.6	3.6
LOS	C	A	A		A	A
Approach Delay	18.4		9.4			3.7
Approach LOS	B		A			A

Lanes, Volumes, Timings  
5: SR 314 East & SR 611



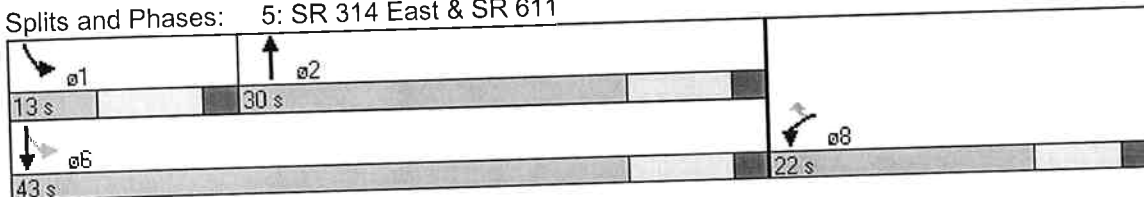
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	11.2	11.2	22.0		5.0	35.0
90th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
70th %ile Green (s)	9.4	9.4	22.0		5.0	35.0
70th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
50th %ile Green (s)	8.1	8.1	22.0		5.0	35.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	7.5	7.5	51.0		0.0	51.0
30th %ile Term Code	Gap	Gap	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	112.0		0.0	112.0
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Queue Length 50th (ft)	25	0	90		5	25
Queue Length 95th (ft)	57	19	147		16	47
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	417	399	2133		458	2628
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.20	0.09	0.36		0.12	0.17

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 74.4  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.36  
 Intersection Signal Delay: 8.1  
 Intersection Capacity Utilization 37.7%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 61.2  
 70th %ile Actuated Cycle: 59.4  
 50th %ile Actuated Cycle: 58.1  
 30th %ile Actuated Cycle: 73.5  
 10th %ile Actuated Cycle: 120

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 5: SR 314 East & SR 611



***TRAFFIC IMPACT STUDY***




















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**Future 2007 No-Build Conditions**

Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2007 No-Build AM Peak  
11/22/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.994			0.995			0.879			0.981	
Fl <sub>t</sub> Protected	0.950			0.950				0.995			0.965	
Satd. Flow (prot)	1711	1852	0	1770	3522	0	0	1629	0	0	1822	0
Fl <sub>t</sub> Permitted	0.472			0.188				0.963			0.492	
Satd. Flow (perm)	850	1852	0	350	3522	0	0	1577	0	0	929	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10			336			13	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	21	478	21	145	438	16	40	3	370	61	12	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	520	23	158	476	17	43	3	402	66	13	13
Lane Group Flow (vph)	23	543	0	158	493	0	0	448	0	0	92	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	27.0	27.0	0.0	11.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	45.0%	45.0%	0.0%	18.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	20.0	20.0		4.0	31.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0		5.0		5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0		11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0		0	0	0		0	0	
Act Effct Green (s)	23.0	23.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.38	0.38		0.57	0.57		0.30	0.30		0.30	0.30	
v/c Ratio	0.07	0.76		0.43	0.25		0.63	0.63		0.32	0.32	
Control Delay	12.6	25.0		10.1	6.8		9.6	9.6		18.1	18.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.6	25.0		10.1	6.8		9.6	9.6		18.1	18.1	
LOS	B	C		B	A		A	A		B	B	
Approach Delay		24.5			7.6		9.6	9.6		18.1	18.1	
Approach LOS		C			A		A	A		B	B	
Queue Length 50th (ft)	5	164		24	41		30	30		22	22	
Queue Length 95th (ft)	18	#311		48	62		108	108		56	56	
Internal Link Dist (ft)		1087			4119		2466	2466		2126	2126	
Turn Bay Length (ft)												
Base Capacity (vph)	326	712		364	2000		708	708		288	288	















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.07	0.76		0.43	0.25			0.63			0.32	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 14.1 Intersection LOS: B  
 Intersection Capacity Utilization 69.1% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 3: SR 940 & Long Pond Road**

ø2	ø3	ø4
22 s	11 s	27 s
ø6	ø8	
22 s	38 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↔						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	731	177	0	511	88	0	0	0	158	0	89
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	795	192	0	555	96	0	0	0	172	0	97
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	651			987			1169	1446	795	1398	1590	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651			987			1169	1446	795	1398	1590	326
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	0	100	86
cM capacity (veh/h)	931			696			127	131	331	100	107	670
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	795	192	370	281	268							
Volume Left	0	0	0	0	172							
Volume Right	0	192	0	96	97							
cSH	1700	1700	1700	1700	145							
Volume to Capacity	0.47	0.11	0.22	0.17	1.85							
Queue Length 95th (ft)	0	0	0	0	510							
Control Delay (s)	0.0	0.0	0.0	0.0	462.5							
Lane LOS					F							
Approach Delay (s)	0.0		0.0		462.5							
Approach LOS					F							
<b>Intersection Summary</b>												
Average Delay			65.1									
Intersection Capacity Utilization			59.3%			ICU Level of Service				B		
Analysis Period (min)			15									





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.827					0.950					
Satd. Flow (perm)	0	2829	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						37			115			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	83	765	0	0	496	34	103	0	106	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	832	0	0	539	37	112	0	115	0	0	0
Lane Group Flow (vph)	0	922	0	0	539	37	112	0	115	0	0	0
Turn Type	Perm					Perm custom			custom			
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.6	66.6	0.0	0.0	66.6	66.6	33.4	0.0	33.4	0.0	0.0	0.0
Total Split (%)	66.6%	66.6%	0.0%	0.0%	66.6%	66.6%	33.4%	0.0%	33.4%	0.0%	0.0%	0.0%
Maximum Green (s)	60.1	60.1			60.1	60.1	26.9		26.9			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.6			62.6	62.6	29.4		29.4			
Actuated g/C Ratio		0.63			0.63	0.63	0.29		0.29			
v/c Ratio		0.52			0.25	0.04	0.23		0.22			
Control Delay		11.7			8.7	2.5	28.3		6.3			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		11.7			8.7	2.5	28.3		6.3			
LOS		B			A	A	C		A			
Approach Delay		11.7			8.3							
Approach LOS		B			A							
Queue Length 50th (ft)		156			73	0	54		0			
Queue Length 95th (ft)		206			99	11	99		40			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1771			2142	1005	486		516			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.52			0.25	0.04	0.23		0.22			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.52  
 Intersection Signal Delay: 11.3  
 Intersection Capacity Utilization 53.0%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

 ø2 33.4 s	 ø4 66.6 s
	 ø8 66.6 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	3	15	55	56	77	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	60	61	84	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1202		
pX, platoon unblocked						
vC, conflicting volume	264	84	84			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	84	84			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	96			
cM capacity (veh/h)	696	976	1513			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	3	16	40	81	84	66
Volume Left	3	0	40	20	0	0
Volume Right	0	16	0	0	0	66
cSH	696	976	1513	1513	1700	1700
Volume to Capacity	0.00	0.02	0.04	0.04	0.05	0.04
Queue Length 95th (ft)	0	1	3	3	0	0
Control Delay (s)	10.2	8.8	7.5	2.1	0.0	0.0
Lane LOS	B	A	A	A		
Approach Delay (s)	9.0		3.9		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			19.7%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations							
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	38	286	13	72	80	12	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	41	311	14	78	87	13	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)				460			
pX, platoon unblocked							
vC, conflicting volume	154	87	87				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	154	87	87				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	95	67	99				
cM capacity (veh/h)	814	954	1507				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	41	311	14	39	39	87	13
Volume Left	41	0	14	0	0	0	0
Volume Right	0	311	0	0	0	0	13
cSH	814	954	1507	1700	1700	1700	1700
Volume to Capacity	0.05	0.33	0.01	0.02	0.02	0.05	0.01
Queue Length 95th (ft)	4	36	1	0	0	0	0
Control Delay (s)	9.7	10.6	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	10.5		1.1			0.0	
Approach LOS	B						
Intersection Summary							
Average Delay			7.0				
Intersection Capacity Utilization			28.6%		ICU Level of Service		A
Analysis Period (min)			15				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗	↖	↑	↗	↖	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.999				0.850			0.850		0.864	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3536	0	1770	3539	1583	1770	2111	1583	1829	1663	0
Flt Permitted				0.281			0.721			0.575		
Satd. Flow (perm)	0	3536	0	523	3539	1583	1343	2111	1583	1107	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				150			22		50	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	466	4	20	413	138	71	142	20	38	5	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	507	4	22	449	150	77	154	22	41	5	50
Lane Group Flow (vph)	0	511	0	22	449	150	77	154	22	41	55	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	29.0	0.0	17.0	46.0	16.0	15.0	28.0	28.0	16.0	29.0	0.0
Total Split (%)	0.0%	32.2%	0.0%	18.9%	51.1%	17.8%	16.7%	31.1%	31.1%	17.8%	32.2%	0.0%
Maximum Green (s)		22.0		10.0	39.0	11.0	10.0	23.0	23.0	11.0	24.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		17.8		22.5	22.2	32.9	32.9	27.0	27.0	32.5	28.7	
Actuated g/C Ratio		0.27		0.30	0.33	0.48	0.47	0.41	0.41	0.47	0.43	
v/c Ratio		0.54		0.07	0.38	0.18	0.11	0.18	0.03	0.07	0.07	
Control Delay		24.6		15.9	17.3	2.0	11.4	18.4	9.2	11.2	8.2	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		24.6		15.9	17.3	2.0	11.4	18.4	9.2	11.2	8.2	
LOS		C		B	B	A	B	B	A	B	A	
Approach Delay		24.6			13.6			15.5			9.4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			B			A		
90th %ile Green (s)	22.0			7.2	36.2	8.0	10.0	26.0	26.0	8.0	24.0	
90th %ile Term Code	Max			Gap	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	18.5			6.5	32.0	7.0	8.4	25.4	25.4	7.0	24.0	
70th %ile Term Code	Gap			Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
50th %ile Green (s)	13.9			0.0	13.9	6.0	6.7	24.7	24.7	6.0	24.0	
50th %ile Term Code	Gap			Skip	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
30th %ile Green (s)	11.9			0.0	11.9	5.6	0.0	23.0	23.0	5.6	33.6	
30th %ile Term Code	Gap			Skip	Hold	Gap	Skip	MaxR	MaxR	Gap	Hold	
10th %ile Green (s)	8.4			0.0	8.4	0.0	0.0	24.0	24.0	0.0	24.0	
10th %ile Term Code	Gap			Skip	Hold	Skip	Skip	Hold	Hold	Skip	MaxR	
Queue Length 50th (ft)	84			6	72	0	11	35	0	6	1	
Queue Length 95th (ft)	171			20	112	22	48	110	17	30	29	
Internal Link Dist (ft)	1752			4920			2736			2592		
Turn Bay Length (ft)												
Base Capacity (vph)	1232			366	1757	828	697	858	656	644	748	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.41			0.06	0.26	0.18	0.11	0.18	0.03	0.06	0.07	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 66.4  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 17.4  
 Intersection Capacity Utilization 37.4%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 87.2  
 70th %ile Actuated Cycle: 81.4  
 50th %ile Actuated Cycle: 61.6  
 30th %ile Actuated Cycle: 57.5  
 10th %ile Actuated Cycle: 44.4

Splits and Phases: 3: SR 940 & Industrial Dr





















ø1	ø2	ø3	ø4
16 s	28 s	17 s	29 s
ø5	ø6	ø7	ø8
15 s	29 s	46 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.281			0.333			0.950			0.950		
Satd. Flow (perm)	523	3529	0	620	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				83			47			36
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	71	437	10	41	506	76	15	0	43	64	0	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	475	11	45	550	83	16	0	47	70	0	36
Lane Group Flow (vph)	77	486	0	45	550	83	16	0	47	70	0	36
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	16.0	31.0	0.0	16.0	31.0	31.0	26.0	0.0	26.0	27.0	0.0	27.0
Total Split (%)	16.0%	31.0%	0.0%	16.0%	31.0%	31.0%	26.0%	0.0%	26.0%	27.0%	0.0%	27.0%
Maximum Green (s)	9.0	24.0		9.0	24.0	24.0	20.0		20.0	21.0		21.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	39.0	27.0		39.0	27.0	27.0	22.0		22.0	23.0		23.0
Actuated g/C Ratio	0.39	0.27		0.39	0.27	0.27	0.22		0.22	0.23		0.23
v/c Ratio	0.22	0.51		0.12	0.58	0.17	0.04		0.12	0.09		0.09
Control Delay	18.8	33.0		17.6	34.4	7.4	31.2		10.4	30.7		10.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	18.8	33.0		17.6	34.4	7.4	31.2		10.4	30.7		10.8
LOS	B	C		B	C	A	C		B	C		B
Approach Delay		31.1			30.0							
Approach LOS		C			C							
Queue Length 50th (ft)	28	137		16	159	0	8		0	18		0
Queue Length 95th (ft)	57	188		38	214	36	26		30	36		26
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	354	954		380	956	488	389		385	790		392
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0





												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.961				0.850		0.995			0.995	
Flt Protected		0.971			0.958		0.950			0.950		
Satd. Flow (prot)	0	2055	0	0	1987	2850	1801	3543	0	1733	1886	0
Flt Permitted		0.971			0.958		0.174			0.174		
Satd. Flow (perm)	0	2055	0	0	1987	2850	330	3543	0	317	1886	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				334		3			3	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	47	9	23	50	7	307	8	297	10	337	590	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	51	10	25	54	8	334	9	323	11	366	641	21
Lane Group Flow (vph)	0	86	0	0	62	334	9	334	0	366	662	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2 9		1	6 1	
Permitted Phases	4	4		8	8	8	2 9	2 9		6 1	6 1	
Detector Phases	4	4		8	8	8	9	2 9		1	6 1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	35.0	0.0	41.0	66.0	0.0
Total Split (%)	15.5%	15.5%	0.0%	15.5%	15.5%	15.5%	9.1%	31.8%	0.0%	37.3%	60.0%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		14.0			14.7	14.7	31.1	33.1		62.3	64.3	
Actuated g/C Ratio		0.13			0.14	0.14	0.29	0.31		0.59	0.61	
v/c Ratio		0.30			0.22	0.49	0.04	0.30		0.52	0.58	
Control Delay		38.1			44.8	7.4	27.6	29.2		9.6	3.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		1.9	1.3	
Total Delay		38.1			44.8	7.4	27.6	29.2		11.5	4.4	
LOS		D			D	A	C	C		B	A	
Approach Delay		38.1			13.2			29.2			6.9	



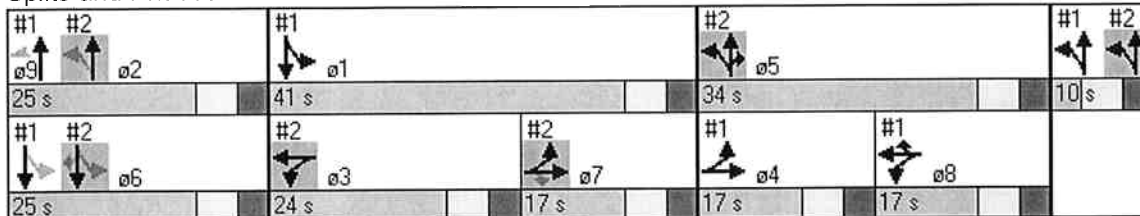
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D		B					C		A		
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			34.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
50th %ile Green (s)	10.0	10.0		9.8	9.8	9.8	3.0			34.0		
50th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
30th %ile Green (s)	8.6	8.6		8.4	8.4	8.4	3.0			34.0		
30th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	0.0	0.0		10.1	10.1	10.1	3.0			34.0		
10th %ile Term Code	Skip	Skip		Hold	Hold	Hold	Max			Hold		
Queue Length 50th (ft)	45			40		0	4	94		124	39	
Queue Length 95th (ft)	93			80		44	17	134		m145	m33	
Internal Link Dist (ft)	1072			1692			1410			270		
Turn Bay Length (ft)						150	150	250				
Base Capacity (vph)	306			283		692	208	1110		710	1145	
Starvation Cap Reductn	0			0		0	0	0		203	275	
Spillback Cap Reductn	0			0		0	0	0		0	0	
Storage Cap Reductn	0			0		0	0	0		0	0	
Reduced v/c Ratio	0.28			0.22		0.48	0.04	0.30		0.72	0.76	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 106  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 13.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 54.9%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.8  
 30th %ile Actuated Cycle: 107  
 10th %ile Actuated Cycle: 93.1

m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 1: Commercial Drive & SR 611**





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>			0.850		0.999				0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1863	1961	1522	1739	1857	0	1801	1895	1611	0	3601	1611
Fl <sub>t</sub> Permitted	0.950			0.950			0.200				0.745	
Satd. Flow (perm)	1863	1961	1522	1739	1857	0	379	1895	1611	0	2683	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208						179			236
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	165	107	191	292	107	1	252	234	165	3	463	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	179	116	208	317	116	1	274	254	179	3	503	304
Lane Group Flow (vph)	179	116	208	317	117	0	274	254	179	0	506	304
Turn Type	Split		Perm	custom			pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5		6	
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	17.0	17.0	17.0	24.0	24.0	0.0	44.0	69.0	34.0	25.0	25.0	25.0
Total Split (%)	15.5%	15.5%	15.5%	21.8%	21.8%	0.0%	40.0%	62.7%	30.9%	22.7%	22.7%	22.7%
Maximum Green (s)	10.0	10.0	10.0	17.0	17.0				27.0	18.0	18.0	18.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	15.1	15.1	15.1	22.1	22.1		60.8	62.8	27.7		23.1	23.1
Actuated g/C Ratio	0.14	0.14	0.14	0.21	0.21		0.57	0.59	0.26		0.22	0.22
v/c Ratio	0.68	0.42	0.53	0.87	0.30		0.38	0.23	0.32		0.86	0.57
Control Delay	58.3	48.1	11.3	67.0	39.5		21.0	5.7	18.1		57.3	14.5
Queue Delay	0.0	0.0	0.0	1.6	0.0		0.2	0.4	0.0		0.0	0.0
Total Delay	58.3	48.1	11.3	68.5	39.5		21.2	6.1	18.1		57.3	14.5
LOS	E	D	B	E	D		C	A	B		E	B
Approach Delay		36.5			60.7			15.0			41.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			B			D	
90th %ile Green (s)	10.0	10.0	10.0	17.0	17.0				27.0	18.0	18.0	18.0
90th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
70th %ile Green (s)	10.0	10.0	10.0	17.0	17.0				27.0	18.0	18.0	18.0
70th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
50th %ile Green (s)	10.0	10.0	10.0	17.0	17.0				26.8	18.0	18.0	18.0
50th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
30th %ile Green (s)	10.0	10.0	10.0	17.0	17.0				24.0	18.0	18.0	18.0
30th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
10th %ile Green (s)	10.0	10.0	10.0	17.0	17.0				10.1	18.0	18.0	18.0
10th %ile Term Code	Max	Max	Max	Max	Max				Gap	Max	Max	Max
Queue Length 50th (ft)	122	76	0	220	71		87	40	20		184	40
Queue Length 95th (ft)	#218	134	68	#388	126		130	43	77		#283	128
Internal Link Dist (ft)		1950			1023			270			2032	
Turn Bay Length (ft)			280				250		250			100
Base Capacity (vph)	265	279	395	363	387		740	1117	613		585	536
Starvation Cap Reductn	0	0	0	0	0		100	457	0		0	0
Spillback Cap Reductn	0	0	1	8	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.68	0.42	0.53	0.89	0.30		0.43	0.38	0.29		0.86	0.57

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 106  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 36.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 57.5%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 110  
 70th %ile Actuated Cycle: 110  
 50th %ile Actuated Cycle: 109.8  
 30th %ile Actuated Cycle: 107  
 10th %ile Actuated Cycle: 93.1  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 2: SR 940 & SR 611**

#1 ↑ ø9	#2 ↑ ø2	#1 ↓ ø1	#2 ↕ ø5	#1 ↕ ø1	#2 ↕ ø2
25 s	41 s	34 s	10 s		
#1 ↓ ø6	#2 ↙ ø3	#2 ↗ ø7	#1 ↗ ø4	#1 ↕ ø8	
25 s	24 s	17 s	17 s	17 s	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	57	377	106	339	633	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	62	410	115	368	688	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1112	353	707			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1112	353	707			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	36	87			
cM capacity (veh/h)	177	643	888			

Direction, Lane #	EB:1	NB:1	NB:2	SB:1	SB:2
Volume Total	472	238	246	459	248
Volume Left	62	115	0	0	0
Volume Right	410	0	0	0	18
cSH	477	888	1700	1700	1700
Volume to Capacity	0.99	0.13	0.14	0.27	0.15
Queue Length 95th (ft)	324	11	0	0	0
Control Delay (s)	67.9	5.4	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	67.9	2.6		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	20.0		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.928			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3284	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.145	
Satd. Flow (perm)	1770	1583	3284	0	270	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60	275			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	310	55	390	361	197	841
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	60	424	392	214	914
Lane Group Flow (vph)	337	60	816	0	214	914
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	34.0	34.0	33.0	0.0	23.0	56.0
Total Split (%)	37.8%	37.8%	36.7%	0.0%	25.6%	62.2%
Maximum Green (s)	27.0	27.0	25.0		15.0	48.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	23.3	23.3	34.0		52.2	52.2
Actuated g/C Ratio	0.28	0.28	0.41		0.63	0.63
v/c Ratio	0.68	0.12	0.54		0.50	0.41
Control Delay	34.3	6.7	14.9		13.4	9.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.3	6.7	14.9		13.4	9.3
LOS	C	A	B		B	A
Approach Delay	30.1		14.9			10.1
Approach LOS	C		B			B



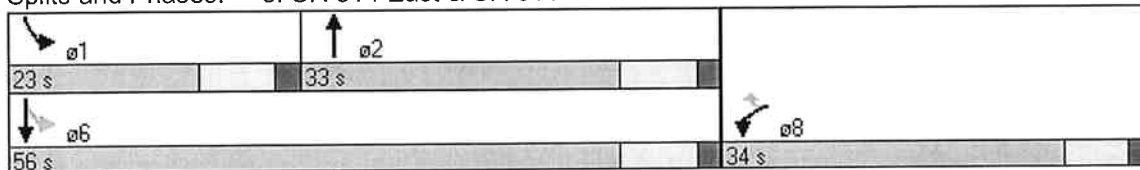
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	27.0	27.0	25.0		15.0	48.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	24.5	24.5	28.4		11.6	48.0
70th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
50th %ile Green (s)	20.9	20.9	30.2		9.8	48.0
50th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
30th %ile Green (s)	17.4	17.4	31.6		8.4	48.0
30th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
10th %ile Green (s)	12.6	12.6	33.3		6.7	48.0
10th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
Queue Length 50th (ft)	156	0	106		44	116
Queue Length 95th (ft)	244	26	202		106	188
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	590	568	1501		483	2213
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.57	0.11	0.54		0.44	0.41

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 83.5  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 15.2  
 Intersection Capacity Utilization 60.5%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 87.5  
 50th %ile Actuated Cycle: 83.9  
 30th %ile Actuated Cycle: 80.4  
 10th %ile Actuated Cycle: 75.6

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 5: SR 314 East & SR 611



Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2007 No-Build Afternoon Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.986			0.892			0.973	
Flt Protected	0.950			0.950				0.991			0.968	
Satd. Flow (prot)	1711	1835	0	1770	3490	0	0	1647	0	0	1813	0
Flt Permitted	0.346			0.151				0.933			0.487	
Satd. Flow (perm)	623	1835	0	281	3490	0	0	1550	0	0	912	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			26			186			12	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	18	506	58	375	676	70	53	7	245	45	9	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	550	63	408	735	76	58	8	266	49	10	15
Lane Group Flow (vph)	20	613	0	408	811	0	0	332	0	0	74	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	46.0	46.0	0.0	28.0	74.0	0.0	26.0	26.0	0.0	26.0	26.0	0.0
Total Split (%)	46.0%	46.0%	0.0%	28.0%	74.0%	0.0%	26.0%	26.0%	0.0%	26.0%	26.0%	0.0%
Maximum Green (s)	39.0	39.0		21.0	67.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	42.0	42.0		70.0	70.0			22.0			22.0	
Actuated g/C Ratio	0.42	0.42		0.70	0.70			0.22			0.22	
v/c Ratio	0.08	0.79		0.74	0.33			0.68			0.35	
Control Delay	18.5	33.9		15.8	3.0			23.4			33.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	18.5	33.9		15.8	3.0			23.4			33.4	
LOS	B	C		B	A			C			C	
Approach Delay		33.4			7.3			23.4			33.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	7	328		77	36			83			33	
Queue Length 95th (ft)	23	476		196	57			185			77	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	262	775		554	2451			486			210	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.79		0.74	0.33			0.68			0.35	

**Intersection Summary**

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Pretimed
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	17.8
Intersection Capacity Utilization	79.0%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	D

**Splits and Phases: 3: SR 940 & Long Pond Road**

ø2	ø3	ø4
26 s	28 s	46 s
ø6	ø8	
26 s	74 s	

HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

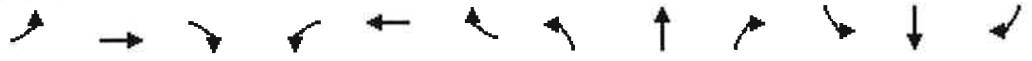
2007 No-Build Afternoon Peak  
 11/22/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	644	152	0	1024	178	0	0	0	49	0	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	700	165	0	1113	193	0	0	0	53	0	107
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1307			865			1363	2007	700	1910	2075	653
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1307			865			1363	2007	700	1910	2075	653
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	0	100	74
cM capacity (veh/h)	526			774			79	59	382	41	53	410

Direction Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	700	165	742	564	160
Volume Left	0	0	0	0	53
Volume Right	0	165	0	193	107
cSH	1700	1700	1700	1700	103
Volume to Capacity	0.41	0.10	0.44	0.33	1.55
Queue Length 95th (ft)	0	0	0	0	301
Control Delay (s)	0.0	0.0	0.0	0.0	361.6
Lane LOS					F
Approach Delay (s)	0.0		0.0		361.6
Approach LOS					F

Intersection Summary		
Average Delay	24.8	
Intersection Capacity Utilization	49.4%	ICU Level of Service A
Analysis Period (min)	15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.712					0.950					
Satd. Flow (perm)	0	2436	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						152			149			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	65	638	0	0	958	140	244	0	137	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	693	0	0	1041	152	265	0	149	0	0	0
Lane Group Flow (vph)	0	764	0	0	1041	152	265	0	149	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	59.2	59.2	0.0	0.0	59.2	59.2	40.8	0.0	40.8	0.0	0.0	0.0
Total Split (%)	59.2%	59.2%	0.0%	0.0%	59.2%	59.2%	40.8%	0.0%	40.8%	0.0%	0.0%	0.0%
Maximum Green (s)	52.7	52.7			52.7	52.7	34.3		34.3			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		55.2			55.2	55.2	36.8		36.8			
Actuated g/C Ratio		0.55			0.55	0.55	0.37		0.37			
v/c Ratio		0.57			0.55	0.16	0.44		0.23			
Control Delay		8.1			15.8	2.2	26.6		4.6			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		8.1			15.8	2.2	26.6		4.6			
LOS		A			B	A	C		A			
Approach Delay		8.1			14.1							
Approach LOS		A			B							
Queue Length 50th (ft)		103			212	0	125		0			
Queue Length 95th (ft)		120			270	27	198		39			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1345			1888	942	608		638			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.57			0.55	0.16	0.44		0.23			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 12.9      Intersection LOS: B  
 Intersection Capacity Utilization 69.5%      ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 9: SR 940 & I-380 NB Ramps

ø2	ø4
40.8 s	59.2 s
	ø8
	59.2 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	16	219	127	80	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	17	238	138	87	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1202					
pX, platoon unblocked						
vC, conflicting volume	701	87	87			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	701	87	87			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	84			
cM capacity (veh/h)	341	972	1509			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	17	159	217	87	46
Volume Left	1	0	159	79	0	0
Volume Right	0	17	0	0	0	46
cSH	341	972	1509	1509	1700	1700
Volume to Capacity	0.00	0.02	0.16	0.16	0.05	0.03
Queue Length 95th (ft)	0	1	14	14	0	0
Control Delay (s)	15.6	8.8	7.8	3.7	0.0	0.0
Lane LOS	C	A	A	A		
Approach Delay (s)	9.2		5.5		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			26.1%	ICU Level of Service	A	
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↙	↗	↙	↑↑	↑	↗	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Volume (veh/h)	77	76	42	269	73	25	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	84	83	46	292	79	27	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None						
Median storage (veh)							
Upstream signal (ft)				460			
pX, platoon unblocked							
vC, conflicting volume	317	79	79				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	317	79	79				
tC, single (s)	6.8	6.9	4.1				
tC, 2 stage (s)							
tF (s)	3.5	3.3	2.2				
p0 queue free %	87	91	97				
cM capacity (veh/h)	632	965	1517				
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	84	83	46	146	146	79	27
Volume Left	84	0	46	0	0	0	0
Volume Right	0	83	0	0	0	0	27
cSH	632	965	1517	1700	1700	1700	1700
Volume to Capacity	0.13	0.09	0.03	0.09	0.09	0.05	0.02
Queue Length 95th (ft)	11	7	2	0	0	0	0
Control Delay (s)	11.6	9.1	7.4	0.0	0.0	0.0	0.0
Lane LOS	B	A	A				
Approach Delay (s)	10.3		1.0			0.0	
Approach LOS	B						
Intersection Summary							
Average Delay			3.4				
Intersection Capacity Utilization			19.9%		ICU Level of Service		A
Analysis Period (min)			15				



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↘	↑↑	↗	↘	↑	↗	↘	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr t		0.998				0.850			0.850		0.873	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3532	0	1770	3539	1583	1770	2111	1583	1829	1680	0
Flt Permitted				0.154			0.188			0.668		
Satd. Flow (perm)	0	3532	0	287	3539	1583	350	2111	1583	1286	1680	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				49			70		156	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	627	8	92	549	45	311	129	64	108	62	332
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	682	9	100	597	49	338	140	70	117	67	361
Lane Group Flow (vph)	0	691	0	100	597	49	338	140	70	117	428	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	26.0	0.0	11.0	37.0	9.0	22.0	44.0	44.0	9.0	31.0	0.0
Total Split (%)	0.0%	28.9%	0.0%	12.2%	41.1%	10.0%	24.4%	48.9%	48.9%	10.0%	34.4%	0.0%
Maximum Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		20.9		29.3	29.2	37.4	47.5	40.8	40.8	33.3	28.5	
Actuated g/C Ratio		0.25		0.34	0.34	0.43	0.56	0.48	0.48	0.38	0.34	
v/c Ratio		0.79		0.46	0.49	0.07	0.76	0.14	0.09	0.22	0.64	
Control Delay		38.7		26.5	23.4	4.4	25.6	15.0	4.2	12.8	21.6	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		38.7		26.5	23.4	4.4	25.6	15.0	4.2	12.8	21.6	
LOS		D		C	C	A	C	B	A	B	C	
Approach Delay		38.7			22.5			20.2			19.7	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			C			B	
90th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
90th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
70th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
70th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
50th %ile Green (s)		19.0		4.0	30.0	4.0	15.3	39.0	39.0	4.0	27.7	
50th %ile Term Code		Max		Max	Hold	Max	Gap	MaxR	MaxR	Max	Hold	
30th %ile Green (s)		19.0		4.0	30.0	4.0	13.2	39.0	39.0	4.0	29.8	
30th %ile Term Code		Max		Max	Hold	Max	Gap	MaxR	MaxR	Max	Hold	
10th %ile Green (s)		13.4		0.0	13.4	0.0	8.2	39.2	39.2	0.0	26.0	
10th %ile Term Code		Gap		Skip	Hold	Skip	Gap	Hold	Hold	Skip	MaxR	
Queue Length 50th (ft)		194		38	133	0	102	46	0	30	132	
Queue Length 95th (ft)		#262		73	182	19	#197	82	23	57	246	
Internal Link Dist (ft)		1752			4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)		913		217	1326	711	482	1013	796	525	668	
Starvation Cap Reductn		0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0		0	0	0	0	0	0	0	0	
Storage Cap Reductn		0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.76		0.46	0.45	0.07	0.70	0.14	0.09	0.22	0.64	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 84.9  
 Natural Cycle: 70  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 25.8  
 Intersection Capacity Utilization 77.0%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 90  
 50th %ile Actuated Cycle: 90  
 30th %ile Actuated Cycle: 90  
 10th %ile Actuated Cycle: 64.6  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
9 s	44 s	11 s	26 s
ø5	ø6	ø8	
22 s	31 s	37 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.566			0.141			0.950			0.950		
Satd. Flow (perm)	1054	3486	0	263	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				414			112			146
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30		30		30
Link Distance (ft)		5000			3536			2736				2816
Travel Time (s)		113.6			80.4			62.2				64.0
Volume (vph)	174	595	67	259	281	381	29	0	103	207	0	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	647	73	282	305	414	32	0	112	225	0	146
Lane Group Flow (vph)	189	720	0	282	305	414	32	0	112	225	0	146
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	13.0	31.0	0.0	24.0	42.0	42.0	23.0	0.0	23.0	22.0	0.0	22.0
Total Split (%)	13.0%	31.0%	0.0%	24.0%	42.0%	42.0%	23.0%	0.0%	23.0%	22.0%	0.0%	22.0%
Maximum Green (s)	6.0	24.0		17.0	35.0	35.0	17.0		17.0	16.0		16.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	36.0	27.0		51.0	38.0	38.0	19.0		19.0	18.0		18.0
Actuated g/C Ratio	0.36	0.27		0.51	0.38	0.38	0.19		0.19	0.18		0.18
v/c Ratio	0.43	0.76		0.65	0.23	0.48	0.10		0.29	0.36		0.36
Control Delay	18.4	38.9		26.0	21.6	4.3	34.4		8.8	37.9		8.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	18.4	38.9		26.0	21.6	4.3	34.4		8.8	37.9		8.9
LOS	B	D		C	C	A	C		A	D		A
Approach Delay		34.7			15.7							
Approach LOS		C			B							
Queue Length 50th (ft)	63	218		105	68	0	17		0	65		0
Queue Length 95th (ft)	105	287		195	100	60	43		45	101		52
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	444	950		436	1345	858	336		391	618		405
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0	0	0		0	0		0
Storage Cap Reductn	0	0		0	0	0	0		0	0		0
Reduced v/c Ratio	0.43	0.76		0.65	0.23	0.48	0.10		0.29	0.36		0.36

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	24.4
Intersection Capacity Utilization	48.8%
Analysis Period (min)	15
Intersection LOS:	C
ICU Level of Service	A

Splits and Phases: 6: SR 940 & Oak St

Ø2	Ø6	Ø3	Ø4
23 s	22 s	24 s	31 s
		Ø7	Ø8
		13 s	42 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕↕	↕	↕↕		↕	↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Fr <sub>t</sub>		0.981				0.850		0.996			0.989	
Fl <sub>t</sub> Protected		0.963			0.960		0.950			0.950		
Satd. Flow (prot)	0	2084	0	0	1992	2850	1801	3547	0	1733	1875	0
Fl <sub>t</sub> Permitted		0.963			0.960		0.129			0.129		
Satd. Flow (perm)	0	2084	0	0	1992	2850	245	3547	0	235	1875	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				628		3			6	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	229	28	43	86	18	578	23	718	22	568	666	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	249	30	47	93	20	628	25	780	24	617	724	57
Lane Group Flow (vph)	0	326	0	0	113	628	25	804	0	617	781	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2 9		1	6 1	
Permitted Phases	4	4		8	8	8	2 9	2 9		6 1	6 1	
Detector Phases	4	4		8	8	8	9	2 9		1	6 1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	22.0	22.0	0.0	17.0	17.0	17.0	10.0	43.0	0.0	43.0	76.0	0.0
Total Split (%)	17.6%	17.6%	0.0%	13.6%	13.6%	13.6%	8.0%	34.4%	0.0%	34.4%	60.8%	0.0%
Maximum Green (s)	15.0	15.0		10.0	10.0	10.0	3.0			36.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		20.0			14.8	14.8	39.0	41.0		72.0	74.0	
Actuated g/C Ratio		0.16			0.12	0.12	0.31	0.33		0.58	0.59	
v/c Ratio		0.96			0.48	0.70	0.14	0.69		0.98	0.70	
Control Delay		91.6			58.8	8.7	30.6	39.9		45.1	6.2	
Queue Delay		20.3			0.0	0.4	0.0	0.2		133.2	6.7	
Total Delay		111.9			58.8	9.0	30.6	40.1		178.3	12.9	
LOS		F			E	A	C	D		F	B	
Approach Delay		111.9			16.6			39.8			85.9	



























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			B			D			F		
90th %ile Green (s)	15.0	15.0		10.0	10.0	10.0	3.0			36.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	15.0	15.0		10.0	10.0	10.0	3.0			36.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
50th %ile Green (s)	15.0	15.0		10.0	10.0	10.0	3.0			36.0		
50th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
30th %ile Green (s)	15.0	15.0		10.0	10.0	10.0	3.0			36.0		
30th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
10th %ile Green (s)	15.0	15.0		8.9	8.9	8.9	3.0			36.0		
10th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Max		
Queue Length 50th (ft)		261			87	0	14	295		473	92	
Queue Length 95th (ft)		#449			148	58	35	367		m#552	m98	
Internal Link Dist (ft)		1072			1692			1410			270	
Turn Bay Length (ft)						150	150			250		
Base Capacity (vph)		339			239	895	176	1167		628	1114	
Starvation Cap Reductn		0			0	0	0	0		161	283	
Spillback Cap Reductn		26			0	44	0	38		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		1.04			0.47	0.74	0.14	0.71		1.32	0.94	

Intersection Summary

Area Type: Other  
 Cycle Length: 125  
 Actuated Cycle Length: 124.8  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 61.3  
 Intersection Capacity Utilization 82.0%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 125  
 70th %ile Actuated Cycle: 125  
 50th %ile Actuated Cycle: 125  
 30th %ile Actuated Cycle: 125  
 10th %ile Actuated Cycle: 123.9  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611

#2 #2 ø9 ø2	#1 ø1	#2 ø5	#1 ø8
33 s	43 s	39 s	10 s
#1 #2 ø6	#2 ø3	#2 ø7	#1 ø4
33 s	24 s	19 s	22 s

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frnt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.999	
Satd. Flow (prot)	1863	1961	1522	1739	1857	0	1801	1895	1611	0	3598	1611
Flt Permitted	0.950			0.950			0.144				0.727	
Satd. Flow (perm)	1863	1961	1522	1739	1857	0	273	1895	1611	0	2618	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			461						432			225
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	156	209	424	270	110	1	323	613	588	6	590	369
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	170	227	461	293	120	1	351	666	639	7	641	401
Lane Group Flow (vph)	170	227	461	293	121	0	351	666	639	0	648	401
Turn Type	Split		Perm custom				pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5			6
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	19.0	19.0	19.0	24.0	24.0	0.0	49.0	82.0	39.0	33.0	33.0	33.0
Total Split (%)	15.2%	15.2%	15.2%	19.2%	19.2%	0.0%	39.2%	65.6%	31.2%	26.4%	26.4%	26.4%
Maximum Green (s)	12.0	12.0	12.0	17.0	17.0				32.0	26.0	26.0	26.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	17.0	17.0	17.0	22.0	22.0		77.8	79.8	36.8		31.0	31.0
Actuated g/C Ratio	0.14	0.14	0.14	0.18	0.18		0.62	0.64	0.29		0.25	0.25
v/c Ratio	0.67	0.85	0.76	0.95	0.37		0.47	0.55	0.82		1.00	0.70
Control Delay	65.2	80.2	13.5	92.5	49.1		30.3	5.7	31.6		81.5	25.7
Queue Delay	0.0	0.0	2.2	283.4	0.0		2.8	0.9	16.5		78.0	0.0
Total Delay	65.2	80.2	15.7	375.9	49.1		33.1	6.6	48.1		159.5	25.7
LOS	E	F	B	F	D		C	A	D		F	C
Approach Delay		42.6			280.4			28.2			108.4	

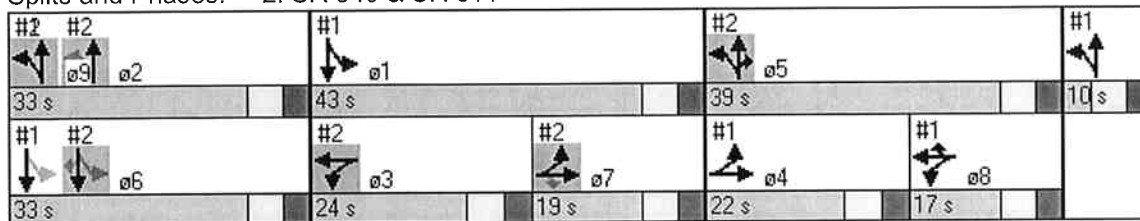


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			F			C			F		
90th %ile Green (s)	12.0	12.0	12.0	17.0	17.0				32.0	26.0	26.0	26.0
90th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
70th %ile Green (s)	12.0	12.0	12.0	17.0	17.0				32.0	26.0	26.0	26.0
70th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
50th %ile Green (s)	12.0	12.0	12.0	17.0	17.0				32.0	26.0	26.0	26.0
50th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
30th %ile Green (s)	12.0	12.0	12.0	17.0	17.0				32.0	26.0	26.0	26.0
30th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
10th %ile Green (s)	12.0	12.0	12.0	17.0	17.0				30.9	26.0	26.0	26.0
10th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
Queue Length 50th (ft)	133	182	0	237	87		157	97	232		277	131
Queue Length 95th (ft)	#215	#321	113	#415	148		m215	m93	m282		#408	252
Internal Link Dist (ft)	1950			1023			270			2032		
Turn Bay Length (ft)	280			250			250			100		
Base Capacity (vph)	254	267	605	307	328		740	1209	782		650	570
Starvation Cap Reductn	0	0	0	0	0		276	274	143		0	0
Spillback Cap Reductn	0	0	58	130	0		0	0	0		111	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.67	0.85	0.84	1.66	0.37		0.76	0.71	1.00		1.20	0.70

**Intersection Summary**

Area Type: Other  
 Cycle Length: 125  
 Actuated Cycle Length: 124.8  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 78.7  
 Intersection Capacity Utilization 84.3%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 125  
 70th %ile Actuated Cycle: 125  
 50th %ile Actuated Cycle: 125  
 30th %ile Actuated Cycle: 125  
 10th %ile Actuated Cycle: 123.9  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 2: SR 940 & SR 611**





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙ ↘			↕ ↗	↕ ↘	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	13	147	363	750	614	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	160	395	815	667	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1883	352	704			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1883	352	704			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	75	56			
cM capacity (veh/h)	35	644	889			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	174	666	543	445	259	
Volume Left	14	395	0	0	0	
Volume Right	160	0	0	0	37	
cSH	266	889	1700	1700	1700	
Volume to Capacity	0.65	0.44	0.32	0.26	0.15	
Queue Length 95th (ft)	104	58	0	0	0	
Control Delay (s)	40.9	9.9	0.0	0.0	0.0	
Lane LOS	E	A				
Approach Delay (s)	40.9	5.4		0.0		
Approach LOS	E					
Intersection Summary						
Average Delay			6.6			
Intersection Capacity Utilization			69.1%	ICU Level of Service	C	
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕	↷	↶	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.971			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3437	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.085	
Satd. Flow (perm)	1770	1583	3437	0	158	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		110	44			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	342	101	1012	241	88	674
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	372	110	1100	262	96	733
Lane Group Flow (vph)	372	110	1362	0	96	733
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	31.0	31.0	47.0	0.0	12.0	59.0
Total Split (%)	34.4%	34.4%	52.2%	0.0%	13.3%	65.6%
Maximum Green (s)	24.0	24.0	39.0		4.0	51.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	24.1	24.1	45.7		55.0	55.1
Actuated g/C Ratio	0.28	0.28	0.52		0.61	0.63
v/c Ratio	0.76	0.21	0.75		0.40	0.33
Control Delay	39.9	6.0	20.5		13.2	8.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	39.9	6.0	20.5		13.2	8.3
LOS	D	A	C		B	A
Approach Delay	32.2		20.5			8.9
Approach LOS	C		C			A





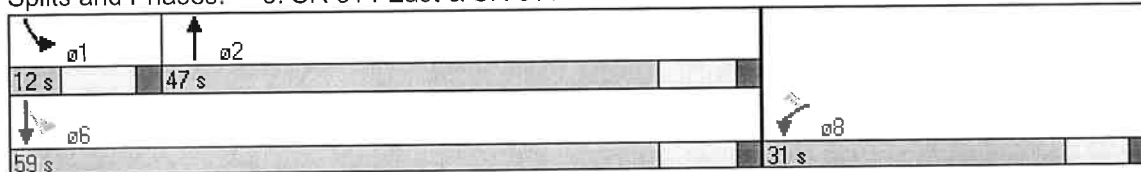
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	24.0	24.0	39.0		4.0	51.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	24.0	24.0	39.0		4.0	51.0
70th %ile Term Code	Max	Max	MaxR		Max	MaxR
50th %ile Green (s)	23.7	23.7	39.0		4.0	51.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	19.8	19.8	39.0		4.0	51.0
30th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
10th %ile Green (s)	14.5	14.5	51.0		0.0	51.0
10th %ile Term Code	Gap	Gap	Hold		Skip	MaxR
Queue Length 50th (ft)	186	0	323		20	97
Queue Length 95th (ft)	288	37	420		47	130
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	531	552	1821		241	2237
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.70	0.20	0.75		0.40	0.33

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.2  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 19.0  
 Intersection Capacity Utilization 69.5%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 90  
 50th %ile Actuated Cycle: 89.7  
 30th %ile Actuated Cycle: 85.8  
 10th %ile Actuated Cycle: 80.5

Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 5: SR 314 East & SR 611



Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2007 No-Build PM Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.981			0.884			0.973	
Flt Protected	0.950			0.950				0.994			0.964	
Satd. Flow (prot)	1711	1827	0	1770	3472	0	0	1637	0	0	1805	0
Flt Permitted	0.475			0.291				0.961			0.779	
Satd. Flow (perm)	855	1827	0	542	3472	0	0	1582	0	0	1459	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			43			186			11	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	25	347	50	269	391	56	26	3	171	38	3	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	377	54	292	425	61	28	3	186	41	3	11
Lane Group Flow (vph)	27	431	0	292	486	0	0	217	0	0	55	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	27.0	27.0	0.0	11.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	45.0%	45.0%	0.0%	18.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	20.0	20.0		4.0	31.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	23.0	23.0		34.0	34.0			18.0			18.0	
Actuated g/C Ratio	0.38	0.38		0.57	0.57			0.30			0.30	
v/c Ratio	0.08	0.61		0.65	0.24			0.36			0.12	
Control Delay	12.7	18.8		14.8	6.3			6.1			13.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.7	18.8		14.8	6.3			6.1			13.9	
LOS	B	B		B	A			A			B	
Approach Delay		18.5			9.5			6.1			13.9	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	6	117		49	37			8			11	
Queue Length 95th (ft)	20	200		#90	58			51			34	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	328	709		450	1986			605			445	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.08	0.61		0.65	0.24			0.36			0.12	

**Intersection Summary**













Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 11.9 Intersection LOS: B  
 Intersection Capacity Utilization 58.0% ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

**Splits and Phases: 3: SR 940 & Long Pond Road**

φ2	φ3	φ4
22 s	11 s	27 s
φ6	φ8	
22 s	38 s	

HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2007 No-Build PM Peak  
 11/22/2005

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↔							↕
Sign Control		Free			Free			Stop				Stop
Grade		0%			0%			0%				0%
Volume (veh/h)	0	419	96	0	671	97	0	0	0	43	0	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	455	104	0	729	105	0	0	0	47	0	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	835			560			869	1290	455	1238	1342	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	835			560			869	1290	455	1238	1342	417
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	65	100	92
cM capacity (veh/h)	794			1007			225	162	552	132	151	584
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	455	104	486	349	96							
Volume Left	0	0	0	0	47							
Volume Right	0	104	0	105	49							
cSH	1700	1700	1700	1700	219							
Volume to Capacity	0.27	0.06	0.29	0.21	0.44							
Queue Length 95th (ft)	0	0	0	0	51							
Control Delay (s)	0.0	0.0	0.0	0.0	33.7							
Lane LOS					D							
Approach Delay (s)	0.0		0.0		33.7							
Approach LOS					D							
<b>Intersection Summary</b>												
Average Delay			2.2									
Intersection Capacity Utilization			33.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
9: SR 940 & I-380 NB Ramps

2007 No-Build PM Peak  
11/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts					0.850				0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.821					0.950					
Satd. Flow (perm)	0	2809	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						83			199			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	52	427	0	0	592	76	175	0	183	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	464	0	0	643	83	190	0	199	0	0	0
Lane Group Flow (vph)	0	521	0	0	643	83	190	0	199	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.6	66.6	0.0	0.0	66.6	66.6	33.4	0.0	33.4	0.0	0.0	0.0
Total Split (%)	66.6%	66.6%	0.0%	0.0%	66.6%	66.6%	33.4%	0.0%	33.4%	0.0%	0.0%	0.0%
Maximum Green (s)	60.1	60.1			60.1	60.1	26.9		26.9			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.6			62.6	62.6	29.4		29.4			
Actuated g/C Ratio		0.63			0.63	0.63	0.29		0.29			
v/c Ratio		0.30			0.30	0.08	0.39		0.35			
Control Delay		9.1			9.1	1.9	31.1		5.8			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		9.1			9.1	1.9	31.1		5.8			
LOS		A			A	A	C		A			
Approach Delay		9.1			8.3							
Approach LOS		A			A							
Queue Length 50th (ft)		73			91	0	96		0			
Queue Length 95th (ft)		101			120	17	160		51			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1758			2142	1022	486		575			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.30			0.30	0.08	0.39		0.35			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay: 10.9  
 Intersection Capacity Utilization 49.4%  
 Analysis Period (min) 15













Intersection LOS: B  
 ICU Level of Service A

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

02	04
33.4 s	66.6 s
	08
	66.6 s

HCM Unsignalized Intersection Capacity Analysis  
 3: 940-WB Ramps & SR 0314

2007 No-Build PM Peak  
 11/22/2005

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	12	60	98	60	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	13	65	107	65	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				1202		
pX, platoon unblocked						
vC, conflicting volume	302	65	65			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	302	65	65			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	96			
cM capacity (veh/h)	660	999	1537			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	13	43	128	65	45
Volume Left	1	0	43	22	0	0
Volume Right	0	13	0	0	0	45
cSH	660	999	1537	1537	1700	1700
Volume to Capacity	0.00	0.01	0.04	0.04	0.04	0.03
Queue Length 95th (ft)	0	1	3	3	0	0
Control Delay (s)	10.5	8.7	7.4	1.5	0.0	0.0
Lane LOS	B	A	A	A		
Approach Delay (s)	8.8		3.0		0.0	
Approach LOS	A					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			20.9%		ICU Level of Service	A
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	62	52	26	96	46	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	57	28	104	50	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				460		
pX, platoon unblocked						
vC, conflicting volume	159	50	50			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	159	50	50			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	94	98			
cM capacity (veh/h)	802	1008	1555			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	67	57	28	52	52	50	14
Volume Left	67	0	28	0	0	0	0
Volume Right	0	57	0	0	0	0	14
cSH	802	1008	1555	1700	1700	1700	1700
Volume to Capacity	0.08	0.06	0.02	0.03	0.03	0.03	0.01
Queue Length 95th (ft)	7	4	1	0	0	0	0
Control Delay (s)	9.9	8.8	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	A	A				
Approach Delay (s)	9.4		1.6			0.0	
Approach LOS	A						

Intersection Summary			
Average Delay		4.3	
Intersection Capacity Utilization	18.2%		ICU Level of Service A
Analysis Period (min)		15	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↘	↑↑	↗	↘	↑	↗	↘	↗	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.997				0.850			0.850		0.894	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3529	0	1770	3539	1583	1770	2111	1583	1829	1721	0
Flt Permitted				0.267			0.594			0.729		
Satd. Flow (perm)	0	3529	0	497	3539	1583	1106	2111	1583	1403	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				34			102		65	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	479	9	86	397	31	155	40	94	42	25	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	521	10	93	432	34	168	43	102	46	27	65
Lane Group Flow (vph)	0	531	0	93	432	34	168	43	102	46	92	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	29.0	0.0	16.0	45.0	14.0	18.0	31.0	31.0	14.0	27.0	0.0
Total Split (%)	0.0%	32.2%	0.0%	17.8%	50.0%	15.6%	20.0%	34.4%	34.4%	15.6%	30.0%	0.0%
Maximum Green (s)		22.0		9.0	38.0	9.0	13.0	26.0	26.0	9.0	22.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		19.7		30.9	30.8	41.7	36.6	28.9	28.9	31.1	26.1	
Actuated g/C Ratio		0.26		0.39	0.40	0.53	0.46	0.38	0.38	0.39	0.34	
v/c Ratio		0.59		0.25	0.30	0.04	0.28	0.05	0.16	0.08	0.15	
Control Delay		29.2		16.0	15.8	2.8	15.0	21.0	5.8	13.8	11.4	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		29.2		16.0	15.8	2.8	15.0	21.0	5.8	13.8	11.4	
LOS		C		B	B	A	B	C	A	B	B	
Approach Delay		29.2			15.1			12.8			12.2	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B			B			B		
90th %ile Green (s)	22.0			9.0	38.0	8.3	13.0	26.7	26.7	8.3	22.0	
90th %ile Term Code	Max			Max	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	20.9			9.0	36.9	7.3	12.1	26.8	26.8	7.3	22.0	
70th %ile Term Code	Gap			Max	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
50th %ile Green (s)	17.3			8.0	32.3	6.6	10.1	26.0	26.0	6.6	22.5	
50th %ile Term Code	Gap			Gap	Hold	Gap	Gap	MaxR	MaxR	Gap	Hold	
30th %ile Green (s)	14.9			7.0	28.9	5.9	8.4	26.0	26.0	5.9	23.5	
30th %ile Term Code	Gap			Gap	Hold	Gap	Gap	MaxR	MaxR	Gap	Hold	
10th %ile Green (s)	8.8			0.0	8.8	0.0	0.0	26.0	26.0	0.0	26.0	
10th %ile Term Code	Gap			Skip	Hold	Skip	Skip	MaxR	MaxR	Skip	Hold	
Queue Length 50th (ft)	126			28	73	0	48	15	0	12	10	
Queue Length 95th (ft)	185			58	109	11	96	41	35	33	49	
Internal Link Dist (ft)	1752			4920			2736			2592		
Turn Bay Length (ft)												
Base Capacity (vph)	1101			384	1695	818	610	793	658	615	626	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.48			0.24	0.25	0.04	0.28	0.05	0.16	0.07	0.15	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 76.9  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 19.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 43.5%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 88  
 50th %ile Actuated Cycle: 81.9  
 30th %ile Actuated Cycle: 77.8  
 10th %ile Actuated Cycle: 46.8

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
14 s	31 s	16 s	29 s
ø5	ø6	ø8	
18 s	27 s	45 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕	↗	↖		↗	↕		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr <sub>t</sub>		0.983				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.359			0.318			0.950			0.950		
Satd. Flow (perm)	669	3479	0	592	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				189			142			117
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	149	447	57	101	351	174	38	0	131	172	0	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	486	62	110	382	189	41	0	142	187	0	117
Lane Group Flow (vph)	162	548	0	110	382	189	41	0	142	187	0	117
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	20.0	31.0	0.0	17.0	28.0	28.0	26.0	0.0	26.0	26.0	0.0	26.0
Total Split (%)	20.0%	31.0%	0.0%	17.0%	28.0%	28.0%	26.0%	0.0%	26.0%	26.0%	0.0%	26.0%
Maximum Green (s)	13.0	24.0		10.0	21.0	21.0	20.0		20.0	20.0		20.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	43.0	27.0		37.0	24.0	24.0	22.0		22.0	22.0		22.0
Actuated g/C Ratio	0.43	0.27		0.37	0.24	0.24	0.22		0.22	0.22		0.22
v/c Ratio	0.35	0.58		0.30	0.45	0.36	0.11		0.31	0.25		0.27
Control Delay	19.7	33.6		19.3	34.4	6.8	32.1		7.6	33.2		7.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	19.7	33.6		19.3	34.4	6.8	32.1		7.6	33.2		7.9
LOS	B	C		B	C	A	C		A	C		A
Approach Delay		30.4			24.3							
Approach LOS		C			C							
Queue Length 50th (ft)	62	154		41	109	0	21		0	51		0
Queue Length 95th (ft)	105	210		75	155	54	50		49	81		45
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	464	950		372	849	524	389		459	755		440
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕↕	↕	↕↕		↕	↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.965				0.850		0.996			0.990	
Flt Protected		0.971			0.960		0.950			0.950		
Satd. Flow (prot)	0	2058	0	0	1992	2850	1801	3547	0	1733	1876	0
Flt Permitted		0.971			0.960		0.267			0.267		
Satd. Flow (perm)	0	2058	0	0	1992	2850	506	3547	0	487	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				408		3			6	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	108	27	47	45	9	375	20	679	20	346	502	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	117	29	51	49	10	408	22	738	22	376	546	41
Lane Group Flow (vph)	0	197	0	0	59	408	22	760	0	376	587	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	29		1	61	
Permitted Phases	4	4		8	8	8	29	29		61	61	
Detector Phases	4	4		8	8	8	9	29		1	61	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	27.0	0.0	34.0	51.0	0.0
Total Split (%)	17.9%	17.9%	0.0%	17.9%	17.9%	17.9%	10.5%	28.4%	0.0%	35.8%	53.7%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			27.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		14.9			13.7	13.7	23.0	25.0		47.0	49.0	
Actuated g/C Ratio		0.16			0.15	0.15	0.25	0.27		0.50	0.52	
v/c Ratio		0.58			0.20	0.53	0.09	0.80		0.56	0.60	
Control Delay		41.2			36.9	6.6	27.1	39.6		10.3	5.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	2.4	
Total Delay		41.2			36.9	6.6	27.1	39.6		10.3	7.9	
LOS		D			D	A	C	D		B	A	
Approach Delay		41.2			10.4			39.2			8.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			B			D			A		
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			27.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			27.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
50th %ile Green (s)	10.0	10.0		9.1	9.1	9.1	3.0			27.0		
50th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
30th %ile Green (s)	10.0	10.0		8.0	8.0	8.0	3.0			27.0		
30th %ile Term Code	Max	Max		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	9.3	9.3		6.5	6.5	6.5	3.0			27.0		
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
Queue Length 50th (ft)		101			31	0	10	222		75	62	
Queue Length 95th (ft)		174			67	44	29	296		m100	m64	
Internal Link Dist (ft)		1072			1692			1410			270	
Turn Bay Length (ft)						150	150			250		
Base Capacity (vph)		343			320	800	235	950		671	986	
Starvation Cap Reductn		0			0	0	0	0		0	265	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.57			0.18	0.51	0.09	0.80		0.56	0.81	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 93.6  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 21.7  
 Intersection Capacity Utilization 63.1%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 95  
 70th %ile Actuated Cycle: 95  
 50th %ile Actuated Cycle: 94.1  
 30th %ile Actuated Cycle: 93  
 10th %ile Actuated Cycle: 90.8

Intersection LOS: C  
 ICU Level of Service B

m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 1: Commercial Drive & SR 611**

#1 #2 ↑ ↑ ø9 ø2 17 s	#1 ↓ ø1 34 s	#2 ↑ ↓ ø5 34 s	#1 #2 ↑ ↑ ø10 ø11 10 s
#1 #2 ↓ ↓ ø6 17 s	#2 ↑ ↓ ø3 17 s	#2 ↑ ↓ ø7 17 s	#1 #1 ↑ ↓ ø4 ø8 17 s



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑	↗	↙	↗		↙	↑	↗		↕	↗
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.999	
Satd. Flow (prot)	1863	1961	1522	1739	1851	0	1801	1895	1611	0	3598	1611
Flt Permitted	0.950			0.950			0.267				0.668	
Satd. Flow (perm)	1863	1961	1522	1739	1851	0	506	1895	1611	0	2406	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			342		1				565			239
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	129	228	315	238	115	4	312	330	520	4	333	220
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	140	248	342	259	125	4	339	359	565	4	362	239
Lane Group Flow (vph)	140	248	342	259	129	0	339	359	565	0	366	239
Turn Type	Split		Perm custom				pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5		6	
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	17.0	17.0	17.0	17.0	17.0	0.0	44.0	61.0	34.0	17.0	17.0	17.0
Total Split (%)	17.9%	17.9%	17.9%	17.9%	17.9%	0.0%	46.3%	64.2%	35.8%	17.9%	17.9%	17.9%
Maximum Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	15.0	15.0	15.0	15.0	15.0		55.6	57.6	30.6		15.0	15.0
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16		0.59	0.62	0.33		0.16	0.16
v/c Ratio	0.47	0.79	0.64	0.93	0.43		0.39	0.31	0.62		0.95	0.52
Control Delay	41.9	57.3	10.4	79.4	40.7		21.1	6.2	17.9		75.4	9.4
Queue Delay	0.0	0.0	0.0	2.0	0.0		0.8	0.5	1.3		0.0	0.0
Total Delay	41.9	57.3	10.5	81.4	40.7		21.9	6.7	19.1		75.4	9.4
LOS	D	E	B	F	D		C	A	B		E	A
Approach Delay		32.4			67.9			16.3			49.3	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			E			B			D		
90th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
90th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
70th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
70th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
50th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				26.1	10.0	10.0	10.0
50th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
30th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				25.0	10.0	10.0	10.0
30th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
10th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				22.8	10.0	10.0	10.0
10th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
Queue Length 50th (ft)	77	144	0	155	70		112	40	179		115	0
Queue Length 95th (ft)	137	#267	80	#307	128		m154	m77	m222		#208	65
Internal Link Dist (ft)	1950			1023			270			2032		
Turn Bay Length (ft)	280						250		250		100	
Base Capacity (vph)	299	315	531	279	298		857	1161	923		386	459
Starvation Cap Reductn	0	0	0	0	0		262	429	176		0	0
Spillback Cap Reductn	0	0	1	4	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.47	0.79	0.65	0.94	0.43		0.57	0.49	0.76		0.95	0.52

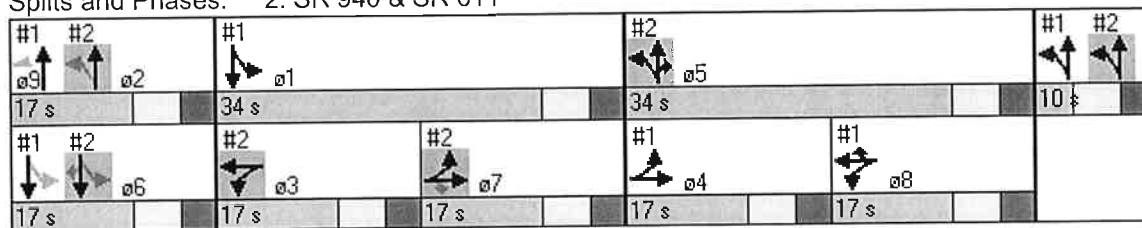
**Intersection Summary**

Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 93.6  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 33.6  
 Intersection Capacity Utilization 62.6%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 95  
 70th %ile Actuated Cycle: 95  
 50th %ile Actuated Cycle: 94.1  
 30th %ile Actuated Cycle: 93  
 10th %ile Actuated Cycle: 90.8

Intersection LOS: C  
 ICU Level of Service B

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 2: SR 940 & SR 611**





HCM Unsignalized Intersection Capacity Analysis  
 3: SR 314 West & SR 611

2007 No-Build PM Peak  
 11/22/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘			↕↕	↕↘	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	35	170	151	672	388	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	185	164	730	422	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1129	225	450			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1129	225	450			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	76	85			
cM capacity (veh/h)	168	778	1107			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	223	408	487	281	169
Volume Left	38	164	0	0	0
Volume Right	185	0	0	0	28
cSH	481	1107	1700	1700	1700
Volume to Capacity	0.46	0.15	0.29	0.17	0.10
Queue Length 95th (ft)	60	13	0	0	0
Control Delay (s)	18.8	4.5	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	18.8	2.0		0.0	
Approach LOS	C				

Intersection Summary					
Average Delay			3.8		
Intersection Capacity Utilization	56.9%		ICU Level of Service	B	
Analysis Period (min)	15				



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕	↘	↙	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.964			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3412	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.133	
Satd. Flow (perm)	1770	1583	3412	0	248	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		52	65			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	130	48	776	248	139	419
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	52	843	270	151	455
Lane Group Flow (vph)	141	52	1113	0	151	455
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	31.0	31.0	47.0	0.0	12.0	59.0
Total Split (%)	34.4%	34.4%	52.2%	0.0%	13.3%	65.6%
Maximum Green (s)	24.0	24.0	39.0		4.0	51.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.5	14.5	45.0		57.1	57.1
Actuated g/C Ratio	0.18	0.18	0.57		0.72	0.72
v/c Ratio	0.44	0.16	0.57		0.46	0.18
Control Delay	32.1	9.2	12.3		8.9	4.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	32.1	9.2	12.3		8.9	4.2
LOS	C	A	B		A	A
Approach Delay	25.9		12.3			5.4
Approach LOS	C		B			A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	16.3	16.3	39.0		4.0	51.0
90th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
70th %ile Green (s)	13.3	13.3	39.0		4.0	51.0
70th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
50th %ile Green (s)	11.4	11.4	39.0		4.0	51.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	9.5	9.5	39.0		4.0	51.0
30th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
10th %ile Green (s)	7.1	7.1	49.3		4.0	61.3
10th %ile Term Code	Gap	Gap	Dwell		Max	Dwell
Queue Length 50th (ft)	61	0	159		19	31
Queue Length 95th (ft)	112	27	249		48	58
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	520	502	1959		331	2537
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.27	0.10	0.57		0.46	0.18

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 79.6  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 11.5  
 Intersection Capacity Utilization 54.3%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 82.3  
 70th %ile Actuated Cycle: 79.3  
 50th %ile Actuated Cycle: 77.4  
 30th %ile Actuated Cycle: 75.5  
 10th %ile Actuated Cycle: 83.4

Intersection LOS: B  
ICU Level of Service A

**Splits and Phases: 5: SR 314 East & SR 611**

ø1	ø2		
12 s	47 s		
ø6		ø8	
59 s		31 s	

Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2007 No-Build SAT Peak  
11/22/2005

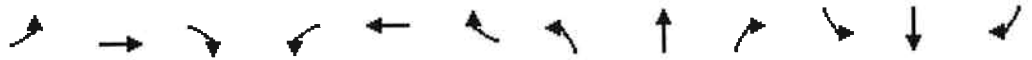


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts		0.974			0.981			0.884			0.972	
Flt Protected	0.950			0.950				0.994			0.964	
Satd. Flow (prot)	1711	1814	0	1770	3472	0	0	1637	0	0	1804	0
Flt Permitted	0.522			0.316				0.961			0.746	
Satd. Flow (perm)	940	1814	0	589	3472	0	0	1582	0	0	1396	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			43			230			11	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	12	307	65	261	313	44	30	4	212	37	3	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	334	71	284	340	48	33	4	230	40	3	11
Lane Group Flow (vph)	13	405	0	284	388	0	0	267	0	0	54	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	27.0	27.0	0.0	11.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	45.0%	45.0%	0.0%	18.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	20.0	20.0		4.0	31.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0		5.0		5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0		11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0		0	0	0		0	0	
Act Effct Green (s)	23.0	23.0		34.0	34.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.38	0.38		0.57	0.57		0.30	0.30		0.30	0.30	
v/c Ratio	0.04	0.57		0.60	0.20		0.42	0.42		0.13	0.13	
Control Delay	12.1	17.7		12.8	5.9		6.2	6.2		13.9	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	12.1	17.7		12.8	5.9		6.2	6.2		13.9	13.9	
LOS	B	B		B	A		A	A		B	B	
Approach Delay		17.5			8.8		6.2	6.2		13.9	13.9	
Approach LOS		B			A		A	A		B	B	
Queue Length 50th (ft)	3	105		47	27		9	9		11	11	
Queue Length 95th (ft)	12	183		84	45		57	57		33	33	
Internal Link Dist (ft)		1087			4119		2466	2466		2126	2126	
Turn Bay Length (ft)												
Base Capacity (vph)	360	708		472	1986		636	636		427	427	



HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2007 No-Build SAT Peak  
 11/22/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	421	135	0	575	66	0	0	0	38	0	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	458	147	0	625	72	0	0	0	41	0	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	697			604			818	1154	458	1118	1265	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	697			604			818	1154	458	1118	1265	348
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	74	100	93
cM capacity (veh/h)	895			969			248	196	550	162	168	648

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	458	147	417	280	89
Volume Left	0	0	0	0	41
Volume Right	0	147	0	72	48
cSH	1700	1700	1700	1700	271
Volume to Capacity	0.27	0.09	0.25	0.16	0.33
Queue Length 95th (ft)	0	0	0	0	35
Control Delay (s)	0.0	0.0	0.0	0.0	24.7
Lane LOS					C
Approach Delay (s)	0.0		0.0		24.7
Approach LOS					C

Intersection Summary		
Average Delay		1.6
Intersection Capacity Utilization	33.6%	ICU Level of Service A
Analysis Period (min)		15

Lanes, Volumes, Timings  
9: SR 940 & I-380 NB Ramps

2007 No-Build SAT Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.843					0.950					
Satd. Flow (perm)	0	2884	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						48			153			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	49	413	0	0	507	44	134	0	141	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	449	0	0	551	48	146	0	153	0	0	0
Lane Group Flow (vph)	0	502	0	0	551	48	146	0	153	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.6	66.6	0.0	0.0	66.6	66.6	33.4	0.0	33.4	0.0	0.0	0.0
Total Split (%)	66.6%	66.6%	0.0%	0.0%	66.6%	66.6%	33.4%	0.0%	33.4%	0.0%	0.0%	0.0%
Maximum Green (s)	60.1	60.1			60.1	60.1	26.9		26.9			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.6			62.6	62.6	29.4		29.4			
Actuated g/C Ratio		0.63			0.63	0.63	0.29		0.29			
v/c Ratio		0.28			0.26	0.05	0.30		0.28			
Control Delay		9.0			8.7	2.3	29.5		5.9			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		9.0			8.7	2.3	29.5		5.9			
LOS		A			A	A	C		A			
Approach Delay		9.0			8.2							
Approach LOS		A			A							
Queue Length 50th (ft)		70			75	0	72		0			
Queue Length 95th (ft)		96			102	13	125		46			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1805			2142	1009	486		543			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.28			0.26	0.05	0.30		0.28			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.30  
 Intersection Signal Delay: 10.4  
 Intersection Capacity Utilization 44.3%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service A

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

↖ ↗ ø2	↖ ↗ ø4
33.4 s	66.6 s
	↖ ↗ ø6
	66.6 s



HCM Unsignalized Intersection Capacity Analysis  
 3: 940-WB Ramps & SR 0314

2007 No-Build SAT Peak  
 11/22/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	12	36	83	39	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	13	39	90	42	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				1202		
pX, platoon unblocked						
vC, conflicting volume	211	42	42			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	211	42	42			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	98			
cM capacity (veh/h)	758	1028	1567			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	1	13	26	103	42	36
Volume Left	1	0	26	13	0	0
Volume Right	0	13	0	0	0	36
cSH	758	1028	1567	1567	1700	1700
Volume to Capacity	0.00	0.01	0.02	0.02	0.02	0.02
Queue Length 95th (ft)	0	1	2	2	0	0
Control Delay (s)	9.8	8.5	7.4	1.1	0.0	0.0
Lane LOS	A	A	A	A		
Approach Delay (s)	8.6		2.4		0.0	
Approach LOS	A					

Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			19.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis  
 4: 940-EB Ramps & SR 0314

2007 No-Build SAT Peak  
 11/22/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	58	52	20	62	42	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	57	22	67	46	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				460		
pX, platoon unblocked						
vC, conflicting volume	123	46	46			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123	46	46			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	94	99			
cM capacity (veh/h)	847	1014	1560			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	63	57	22	34	34	46	10
Volume Left	63	0	22	0	0	0	0
Volume Right	0	57	0	0	0	0	10
cSH	847	1014	1560	1700	1700	1700	1700
Volume to Capacity	0.07	0.06	0.01	0.02	0.02	0.03	0.01
Queue Length 95th (ft)	6	4	1	0	0	0	0
Control Delay (s)	9.6	8.8	7.3	0.0	0.0	0.0	0.0
Lane LOS	A	A	A				
Approach Delay (s)	9.2		1.8			0.0	
Approach LOS	A						

Intersection Summary			
Average Delay		4.8	
Intersection Capacity Utilization	17.8%		ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗	↖	↑	↗	↖	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts		0.996				0.850			0.850		0.886	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3525	0	1770	3539	1583	1770	2111	1583	1829	1705	0
Flt Permitted				0.360			0.608			0.732		
Satd. Flow (perm)	0	3525	0	671	3539	1583	1133	2111	1583	1409	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				25			90		51	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	361	11	58	330	23	150	36	83	24	15	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	392	12	63	359	25	163	39	90	26	16	51
Lane Group Flow (vph)	0	404	0	63	359	25	163	39	90	26	67	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	29.0	0.0	16.0	45.0	14.0	18.0	31.0	31.0	14.0	27.0	0.0
Total Split (%)	0.0%	32.2%	0.0%	17.8%	50.0%	15.6%	20.0%	34.4%	34.4%	15.6%	30.0%	0.0%
Maximum Green (s)		22.0		9.0	38.0	9.0	13.0	26.0	26.0	9.0	22.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		16.3		24.3	24.0	33.6	36.4	31.1	31.1	30.2	25.7	
Actuated g/C Ratio		0.23		0.33	0.35	0.46	0.51	0.45	0.45	0.41	0.37	
v/c Ratio		0.49		0.17	0.29	0.03	0.24	0.04	0.12	0.04	0.10	
Control Delay		26.9		16.5	16.6	3.4	12.2	18.0	5.4	12.1	10.4	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		26.9		16.5	16.6	3.4	12.2	18.0	5.4	12.1	10.4	
LOS		C		B	B	A	B	B	A	B	B	
Approach Delay		26.9			15.8			10.9			10.9	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			B			B			B	
90th %ile Green (s)		19.0		9.0	35.0	7.2	13.0	27.8	27.8	7.2	22.0	
90th %ile Term Code		Gap		Max	Hold	Gap	Max	Hold	Hold	Gap	MaxR	
70th %ile Green (s)		15.9		8.0	30.9	6.5	11.2	26.7	26.7	6.5	22.0	
70th %ile Term Code		Gap		Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
50th %ile Green (s)		13.9		7.1	28.0	6.0	9.4	26.0	26.0	6.0	22.6	
50th %ile Term Code		Gap		Gap	Hold	Gap	Gap	MaxR	MaxR	Gap	Hold	
30th %ile Green (s)		10.3		0.0	10.3	0.0	7.5	34.5	34.5	0.0	22.0	
30th %ile Term Code		Gap		Skip	Hold	Skip	Gap	Hold	Hold	Skip	MaxR	
10th %ile Green (s)		7.6		0.0	7.6	0.0	0.0	26.0	26.0	0.0	26.0	
10th %ile Term Code		Gap		Skip	Hold	Skip	Skip	MaxR	MaxR	Skip	Hold	
Queue Length 50th (ft)		89		18	58	0	41	12	0	6	5	
Queue Length 95th (ft)		141		43	92	10	88	36	31	21	37	
Internal Link Dist (ft)		1752			4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)		1158		393	1710	727	667	946	759	649	663	
Starvation Cap Reductn		0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0		0	0	0	0	0	0	0	0	
Storage Cap Reductn		0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.35		0.16	0.21	0.03	0.24	0.04	0.12	0.04	0.10	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 69.5  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 17.9  
 Intersection LOS: B  
 Intersection Capacity Utilization 38.6%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 87  
 70th %ile Actuated Cycle: 81.1  
 50th %ile Actuated Cycle: 77  
 30th %ile Actuated Cycle: 56.8  
 10th %ile Actuated Cycle: 45.6

Splits and Phases: 3: SR 940 & Industrial Dr

14 s	31 s	16 s	29 s
18 s	27 s	45 s	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↗	↕	↗	↖		↗	↕		↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frft		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3483	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.451			0.460			0.950			0.950		
Satd. Flow (perm)	840	3483	0	857	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				176			218			128
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	130	309	36	60	278	162	57	0	201	190	0	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	336	39	65	302	176	62	0	218	207	0	128
Lane Group Flow (vph)	141	375	0	65	302	176	62	0	218	207	0	128
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	18.0	30.0	0.0	16.0	28.0	28.0	27.0	0.0	27.0	27.0	0.0	27.0
Total Split (%)	18.0%	30.0%	0.0%	16.0%	28.0%	28.0%	27.0%	0.0%	27.0%	27.0%	0.0%	27.0%
Maximum Green (s)	11.0	23.0		9.0	21.0	21.0	21.0		21.0	21.0		21.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	40.0	26.0		36.0	24.0	24.0	23.0		23.0	23.0		23.0
Actuated g/C Ratio	0.40	0.26		0.36	0.24	0.24	0.23		0.23	0.23		0.23
v/c Ratio	0.30	0.41		0.16	0.36	0.34	0.15		0.41	0.26		0.28
Control Delay	20.3	31.2		18.7	33.0	6.8	32.0		7.0	32.6		7.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	20.3	31.2		18.7	33.0	6.8	32.0		7.0	32.6		7.5
LOS	C	C		B	C	A	C		A	C		A
Approach Delay		28.3			22.8							
Approach LOS		C			C							
Queue Length 50th (ft)	55	101		24	84	0	32		0	56		0
Queue Length 95th (ft)	96	144		51	124	52	67		58	87		46
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	466	914		418	849	514	407		532	790		463
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0



Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2007 No-Build SAT Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕↕	↕	↕↕		↕	↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Fr <sub>t</sub>		0.975				0.850		0.993			0.994	
Fl <sub>t</sub> Protected		0.969			0.960		0.950			0.950		
Satd. Flow (prot)	0	2070	0	0	1992	2850	1801	3533	0	1733	1884	0
Fl <sub>t</sub> Permitted		0.969			0.960		0.267			0.267		
Satd. Flow (perm)	0	2070	0	0	1992	2850	506	3533	0	487	1884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				343		5			3	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	39	11	11	49	10	316	7	390	19	309	336	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	42	12	12	53	11	343	8	424	21	336	365	15
Lane Group Flow (vph)	0	66	0	0	64	343	8	445	0	336	380	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	29		1	61	
Permitted Phases	4	4		8	8	8	29	29		61	61	
Detector Phases	4	4		8	8	8	9	29		1	61	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	27.0	0.0	34.0	51.0	0.0
Total Split (%)	17.9%	17.9%	0.0%	17.9%	17.9%	17.9%	10.5%	28.4%	0.0%	35.8%	53.7%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			27.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		13.6			14.3	14.3	23.1	25.1		47.2	49.3	
Actuated g/C Ratio		0.15			0.16	0.16	0.26	0.28		0.52	0.55	
v/c Ratio		0.21			0.20	0.46	0.03	0.45		0.48	0.37	
Control Delay		32.3			36.7	6.4	26.3	29.3		9.0	4.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.6	
Total Delay		32.3			36.7	6.4	26.3	29.3		9.0	5.2	
LOS		C			D	A	C	C		A	A	
Approach Delay		32.3			11.1			29.3			7.0	



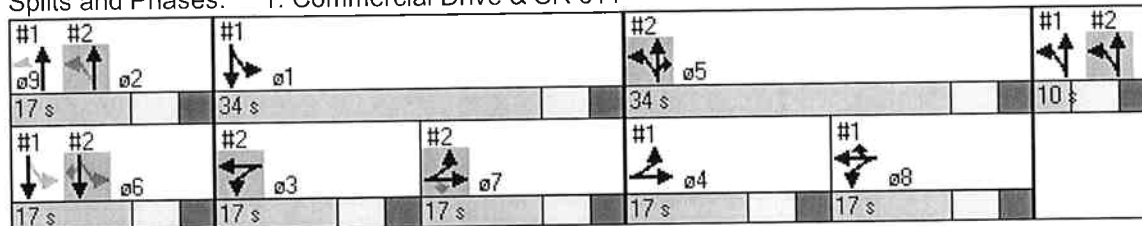
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C		B					C			A	
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0				27.0	
90th %ile Term Code	Max	Max		Max	Max	Max	Max				Max	
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0				27.0	
70th %ile Term Code	Max	Max		Max	Max	Max	Max				Hold	
50th %ile Green (s)	8.9	8.9		9.3	9.3	9.3	3.0				27.0	
50th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max				Hold	
30th %ile Green (s)	7.7	7.7		8.1	8.1	8.1	3.0				27.0	
30th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max				Hold	
10th %ile Green (s)	0.0	0.0		8.8	8.8	8.8	3.0				26.8	
10th %ile Term Code	Skip	Skip		Hold	Hold	Hold	Max				Hold	
Queue Length 50th (ft)		29			34	0	4	114		65	41	
Queue Length 95th (ft)		67			72	41	15	165		m75	m46	
Internal Link Dist (ft)		1072			1692			1410			270	
Turn Bay Length (ft)						150	150			250		
Base Capacity (vph)		355			334	763	246	990		701	1023	
Starvation Cap Reductn		0			0	0	0	0		0	321	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.19			0.19	0.45	0.03	0.45		0.48	0.54	

Intersection Summary
























Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 90.1  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 15.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 47.0%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 95  
 70th %ile Actuated Cycle: 95  
 50th %ile Actuated Cycle: 93.2  
 30th %ile Actuated Cycle: 90.8  
 10th %ile Actuated Cycle: 76.5

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611





												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frts			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.998	
Satd. Flow (prot)	1863	1961	1522	1739	1857	0	1801	1895	1611	0	3594	1611
Flt Permitted	0.950			0.950			0.466				0.632	
Satd. Flow (perm)	1863	1961	1522	1739	1857	0	883	1895	1611	0	2276	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			275						351			190
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	115	194	253	209	105	1	230	193	323	8	197	175
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	125	211	275	227	114	1	250	210	351	9	214	190
Lane Group Flow (vph)	125	211	275	227	115	0	250	210	351	0	223	190
Turn Type	Split		Perm custom				pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5		6	
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	17.0	17.0	17.0	17.0	17.0	0.0	44.0	61.0	34.0	17.0	17.0	17.0
Total Split (%)	17.9%	17.9%	17.9%	17.9%	17.9%	0.0%	46.3%	64.2%	35.8%	17.9%	17.9%	17.9%
Maximum Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	15.1	15.1	15.1	15.1	15.1		51.9	53.9	26.7		15.1	15.1
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17		0.58	0.60	0.30		0.17	0.17
v/c Ratio	0.40	0.64	0.57	0.78	0.37		0.28	0.19	0.48		0.59	0.44
Control Delay	39.7	46.7	9.8	57.2	39.1		8.6	4.5	17.5		43.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.3	0.0	0.3		0.0	0.0
Total Delay	39.7	46.7	9.8	57.2	39.1		8.8	4.5	17.8		43.1	9.2
LOS	D	D	A	E	D		A	A	B		D	A
Approach Delay		28.7			51.1			11.6			27.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			D			B			C		
90th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
90th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
70th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				27.0	10.0	10.0	10.0
70th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
50th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				25.2	10.0	10.0	10.0
50th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
30th %ile Green (s)	10.0	10.0	10.0	10.0	10.0				22.8	10.0	10.0	10.0
30th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
10th %ile Green (s)	9.8	9.8	9.8	10.0	10.0				8.8	9.9	9.9	9.9
10th %ile Term Code	Gap	Gap	Gap	Max	Max				Gap	Gap	Gap	Gap
Queue Length 50th (ft)	67	119	0	131	61		31	26	90		65	0
Queue Length 95th (ft)	124	#211	71	#259	117		66	30	139		107	59
Internal Link Dist (ft)	1950				1023			270			2032	
Turn Bay Length (ft)			280				250		250			100
Base Capacity (vph)	312	329	484	292	311		907	1134	801		381	428
Starvation Cap Reductn	0	0	0	0	0		247	0	118		0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.40	0.64	0.57	0.78	0.37		0.38	0.19	0.51		0.59	0.44

Intersection Summary












Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 90.1  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 25.6  
 Intersection LOS: C  
 Intersection Capacity Utilization 51.5%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 95  
 70th %ile Actuated Cycle: 95  
 50th %ile Actuated Cycle: 93.2  
 30th %ile Actuated Cycle: 90.8  
 10th %ile Actuated Cycle: 76.5  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 940 & SR 611

#1 ↑ ø3	#2 ↑ ø2	#1 ↘ ø1	#2 ↘ ø5	#1 ↑ ø2	#2 ↑ ø1
17 s	17 s	34 s	34 s	10 s	10 s
#1 ↓ ø6	#2 ↘ ø3	#2 ↘ ø7	#1 ↘ ø4	#1 ↘ ø8	
17 s	17 s	17 s	17 s	17 s	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	8	83	105	561	401	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	90	114	610	436	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	982	231	462			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	982	231	462			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	88	90			
cM capacity (veh/h)	221	771	1096			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	99	317	407	291	171	
Volume Left	9	114	0	0	0	
Volume Right	90	0	0	0	26	
cSH	632	1096	1700	1700	1700	
Volume to Capacity	0.16	0.10	0.24	0.17	0.10	
Queue Length 95th (ft)	14	9	0	0	0	
Control Delay (s)	11.7	3.8	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	11.7	1.7		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			46.0%	ICU Level of Service	A	
Analysis Period (min)			15			

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.980			
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3468	0	1770	3539
Fit Permitted	0.950				0.244	
Satd. Flow (perm)	1770	1583	3468	0	455	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		35	26			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	80	32	635	98	53	432
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	35	690	107	58	470
Lane Group Flow (vph)	87	35	797	0	58	470
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	31.0	31.0	47.0	0.0	12.0	59.0
Total Split (%)	34.4%	34.4%	52.2%	0.0%	13.3%	65.6%
Maximum Green (s)	24.0	24.0	39.0		4.0	51.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	12.9	12.9	58.3		67.0	66.5
Actuated g/C Ratio	0.15	0.15	0.66		0.72	0.76
v/c Ratio	0.33	0.13	0.34		0.13	0.18
Control Delay	31.2	10.8	7.7		4.1	3.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	31.2	10.8	7.7		4.1	3.3
LOS	C	B	A		A	A
Approach Delay	25.4		7.7			3.4
Approach LOS	C		A			A



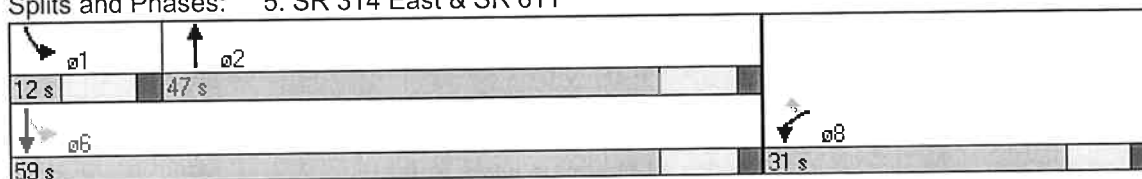
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	12.6	12.6	39.0		4.0	51.0
90th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
70th %ile Green (s)	10.5	10.5	39.0		4.0	51.0
70th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
50th %ile Green (s)	9.0	9.0	39.0		4.0	51.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	7.6	7.6	65.6		0.0	65.6
30th %ile Term Code	Gap	Gap	Dwell		Skip	Dwell
10th %ile Green (s)	6.9	6.9	98.1		0.0	98.1
10th %ile Term Code	Gap	Gap	Dwell		Skip	Dwell
Queue Length 50th (ft)	36	0	94		6	27
Queue Length 95th (ft)	75	23	147		17	50
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	480	454	2313		449	2684
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.18	0.08	0.34		0.13	0.18

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.7  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.34  
 Intersection Signal Delay: 7.6  
 Intersection Capacity Utilization 38.4%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 78.6  
 70th %ile Actuated Cycle: 76.5  
 50th %ile Actuated Cycle: 75  
 30th %ile Actuated Cycle: 88.2  
 10th %ile Actuated Cycle: 120

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 5: SR 314 East & SR 611



***TRAFFIC IMPACT STUDY***

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**Future 2017 No-Build Conditions**



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts		0.994			0.995			0.879			0.981	
Flt Protected	0.950			0.950				0.995			0.965	
Satd. Flow (prot)	1711	1852	0	1770	3522	0	0	1629	0	0	1822	0
Flt Permitted	0.436			0.148				0.959			0.408	
Satd. Flow (perm)	785	1852	0	276	3522	0	0	1570	0	0	770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			10			296			14	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	24	555	24	169	508	19	47	4	429	71	14	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	603	26	184	552	21	51	4	466	77	15	15
Lane Group Flow (vph)	26	629	0	184	573	0	0	521	0	0	107	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2				6
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	27.0	27.0	0.0	11.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	0.0
Total Split (%)	45.0%	45.0%	0.0%	18.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	0.0%
Maximum Green (s)	20.0	20.0		4.0	31.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	23.0	23.0		34.0	34.0			18.0			18.0	
Actuated g/C Ratio	0.38	0.38		0.57	0.57			0.30			0.30	
v/c Ratio	0.09	0.88		0.56	0.29			0.77			0.44	
Control Delay	12.9	34.5		14.0	7.1			17.6			22.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	12.9	34.5		14.0	7.1			17.6			22.0	
LOS	B	C		B	A			B			C	
Approach Delay		33.7			8.8			17.6			22.0	
Approach LOS		C			A			B			C	
Queue Length 50th (ft)	6	204		29	48			66			26	
Queue Length 95th (ft)	20	#390		65	73			#220			69	
Internal Link Dist (ft)		1087			4119			2466			2126	
Turn Bay Length (ft)												
Base Capacity (vph)	301	712		331	2000			678			241	





HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2017 No-Build AM Peak  
 11/22/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	849	206	0	593	102	0	0	0	184	0	103
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	923	224	0	645	111	0	0	0	200	0	112
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	755			1147			1357	1678	923	1623	1847	378
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	755			1147			1357	1678	923	1623	1847	378
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	0	100	82
cM capacity (veh/h)	851			605			88	94	272	68	74	620

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	923	224	430	326	312
Volume Left	0	0	0	0	200
Volume Right	0	224	0	111	112
cSH	1700	1700	1700	1700	100
Volume to Capacity	0.54	0.13	0.25	0.19	3.11
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary				
Average Delay		1408.8		
Intersection Capacity Utilization		67.8%	ICU Level of Service	C
Analysis Period (min)		15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr t						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.801					0.950					
Satd. Flow (perm)	0	2740	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						42			134			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	97	888	0	0	575	39	120	0	123	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	965	0	0	625	42	130	0	134	0	0	0
Lane Group Flow (vph)	0	1070	0	0	625	42	130	0	134	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	66.6	66.6	0.0	0.0	66.6	66.6	33.4	0.0	33.4	0.0	0.0	0.0
Total Split (%)	66.6%	66.6%	0.0%	0.0%	66.6%	66.6%	33.4%	0.0%	33.4%	0.0%	0.0%	0.0%
Maximum Green (s)	60.1	60.1			60.1	60.1	26.9		26.9			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		62.6			62.6	62.6	29.4		29.4			
Actuated g/C Ratio		0.63			0.63	0.63	0.29		0.29			
v/c Ratio		0.62			0.29	0.04	0.27		0.25			
Control Delay		13.5			9.0	2.4	28.9		6.1			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		13.5			9.0	2.4	28.9		6.1			
LOS		B			A	A	C		A			
Approach Delay		13.5			8.6							
Approach LOS		B			A							
Queue Length 50th (ft)		201			87	0	63		0			
Queue Length 95th (ft)		265			116	12	113		43			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1715			2142	1007	486		529			



HCM Unsignalized Intersection Capacity Analysis  
 3: 940-WB Ramps & SR 0314

2017 No-Build AM Peak  
 11/22/2005



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	4	18	63	65	90	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	20	68	71	98	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1202					
pX, platoon unblocked						
vC, conflicting volume	305	98	98			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	98	98			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
iF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	95			
cM capacity (veh/h)	655	958	1495			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	4	20	46	93	98	77
Volume Left	4	0	46	23	0	0
Volume Right	0	20	0	0	0	77
cSH	655	958	1495	1495	1700	1700
Volume to Capacity	0.01	0.02	0.05	0.05	0.06	0.05
Queue Length 95th (ft)	1	2	4	4	0	0
Control Delay (s)	10.5	8.8	7.5	2.1	0.0	0.0
Lane LOS	B	A	A	A		
Approach Delay (s)	9.1		3.9		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization			20.1%	ICU Level of Service	A	
Analysis Period (min)			15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑↑	↑	↗
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	44	332	17	84	93	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	361	18	91	101	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)				460		
pX, platoon unblocked						
vC, conflicting volume	184	101	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	184	101	101			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	61	99			
cM capacity (veh/h)	778	935	1489			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	48	361	18	46	46	101	15
Volume Left	48	0	18	0	0	0	0
Volume Right	0	361	0	0	0	0	15
cSH	778	935	1489	1700	1700	1700	1700
Volume to Capacity	0.06	0.39	0.01	0.03	0.03	0.06	0.01
Queue Length 95th (ft)	5	46	1	0	0	0	0
Control Delay (s)	9.9	11.3	7.4	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	11.1		1.3			0.0	
Approach LOS	B						

Intersection Summary			
Average Delay		7.4	
Intersection Capacity Utilization		32.1%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗	↖	↑	↗	↖	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.999				0.850			0.850		0.866	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3536	0	1770	3539	1583	1770	2111	1583	1829	1667	0
Flt Permitted				0.255			0.714			0.533		
Satd. Flow (perm)	0	3536	0	475	3539	1583	1330	2111	1583	1026	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				174			25		59	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	540	5	24	480	160	82	165	23	44	6	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	587	5	26	522	174	89	179	25	48	7	59
Lane Group Flow (vph)	0	592	0	26	522	174	89	179	25	48	66	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	32.0	0.0	17.0	49.0	16.0	16.0	25.0	25.0	16.0	25.0	0.0
Total Split (%)	0.0%	35.6%	0.0%	18.9%	54.4%	17.8%	17.8%	27.8%	27.8%	17.8%	27.8%	0.0%
Maximum Green (s)		25.0		10.0	42.0	11.0	11.0	20.0	20.0	11.0	20.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0		5.0				5.0	5.0		5.0	
Flash Dont Walk (s)		11.0		11.0				11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0		0				0	0		0	
Act Effct Green (s)		19.3		23.8	23.5	34.4	29.9	23.5	23.5	28.0	22.6	
Actuated g/C Ratio		0.30		0.33	0.36	0.52	0.45	0.36	0.36	0.42	0.35	
v/c Ratio		0.56		0.08	0.40	0.19	0.14	0.23	0.04	0.09	0.11	
Control Delay		22.7		14.4	15.7	1.6	12.5	20.9	10.0	12.7	9.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		22.7		14.4	15.7	1.6	12.5	20.9	10.0	12.7	9.0	
LOS		C		B	B	A	B	C	A	B	A	
Approach Delay		22.7			12.3			17.4			10.6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			B				B			B	
90th %ile Green (s)	25.0			7.2	39.2	8.5	10.9	22.4	22.4	8.5	20.0	
90th %ile Term Code	Max			Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
70th %ile Green (s)	21.1			6.5	34.6	7.3	9.0	21.7	21.7	7.3	20.0	
70th %ile Term Code	Gap			Gap	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
50th %ile Green (s)	14.8			0.0	14.8	6.2	6.9	20.7	20.7	6.2	20.0	
50th %ile Term Code	Gap			Skip	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
30th %ile Green (s)	12.8			0.0	12.8	5.7	6.2	20.5	20.5	5.7	20.0	
30th %ile Term Code	Gap			Skip	Hold	Gap	Gap	Hold	Hold	Gap	MaxR	
10th %ile Green (s)	8.6			0.0	8.6	0.0	0.0	20.0	20.0	0.0	20.0	
10th %ile Term Code	Gap			Skip	Hold	Skip	Skip	MaxR	MaxR	Skip	MaxR	
Queue Length 50th (ft)	90			6	77	0	13	42	0	7	2	
Queue Length 95th (ft)	188			20	121	21	58	134	19	36	34	
Internal Link Dist (ft)	1752				4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)	1387			378	1891	888	676	769	593	586	622	
Starvation Cap Reductn	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.43			0.07	0.28	0.20	0.13	0.23	0.04	0.08	0.11	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 64.6  
 Natural Cycle: 65  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 16.6  
 Intersection Capacity Utilization 42.0%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 87.1  
 70th %ile Actuated Cycle: 80.6  
 50th %ile Actuated Cycle: 58.7  
 30th %ile Actuated Cycle: 56  
 10th %ile Actuated Cycle: 40.6

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
16 s	25 s	17 s	32 s
ø5	ø6	ø8	
16 s	25 s	49 s	

Lanes, Volumes, Timings  
6: SR 940 & Oak St

2017 No-Build AM Peak  
11/23/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Fr't		0.997				0.850			0.850			0.850
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	0	1583	3433	0	1583
Fit Permitted	0.236			0.287			0.950			0.950		
Satd. Flow (perm)	440	3529	0	535	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				96			54			41
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	82	508	12	48	587	88	18	0	50	74	0	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	552	13	52	638	96	20	0	54	80	0	41
Lane Group Flow (vph)	89	565	0	52	638	96	20	0	54	80	0	41
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8							
Permitted Phases	4			8		8	2		2	6		6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	15.0	33.0	0.0	15.0	33.0	33.0	26.0	0.0	26.0	26.0	0.0	26.0
Total Split (%)	15.0%	33.0%	0.0%	15.0%	33.0%	33.0%	26.0%	0.0%	26.0%	26.0%	0.0%	26.0%
Maximum Green (s)	8.0	26.0		8.0	26.0	26.0	20.0		20.0	20.0		20.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	40.0	29.0		40.0	29.0	29.0	22.0		22.0	22.0		22.0
Actuated g/C Ratio	0.40	0.29		0.40	0.29	0.29	0.22		0.22	0.22		0.22
v/c Ratio	0.28	0.55		0.15	0.62	0.18	0.05		0.14	0.11		0.11
Control Delay	19.0	32.3		17.4	33.9	6.6	31.3		9.9	31.7		10.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	19.0	32.3		17.4	33.9	6.6	31.3		9.9	31.7		10.7
LOS	B	C		B	C	A	C		A	C		B
Approach Delay		30.5			29.5							
Approach LOS		C			C							
Queue Length 50th (ft)	33	159		19	185	0	10		0	21		0
Queue Length 95th (ft)	63	214		41	244	37	30		31	40		27
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	322	1025		350	1026	527	389		390	755		380
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0	0	0		0	0		0
Storage Cap Reductn	0	0		0	0	0	0		0	0		0
Reduced v/c Ratio	0.28	0.55		0.15	0.62	0.18	0.05		0.14	0.11		0.11

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 28.9                      Intersection LOS: C  
 Intersection Capacity Utilization 34.1%                      ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 6: SR 940 & Oak St

ø2	ø6	ø3	ø4
26 s	26 s	15 s	33 s
		ø7	ø8
		15 s	33 s

Lanes, Volumes, Timings  
1: Commercial Drive & SR 611

2017 No-Build AM Peak  
11/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕↕	↕	↕↕		↕	↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Frnt		0.962				0.850		0.993			0.995	
Flt Protected		0.971			0.958		0.950			0.950		
Satd. Flow (prot)	0	2056	0	0	1987	2850	1801	3533	0	1733	1886	0
Flt Permitted		0.971			0.958		0.154			0.154		
Satd. Flow (perm)	0	2056	0	0	1987	2850	292	3533	0	281	1886	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				387		4			3	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	55	11	26	59	8	356	10	244	12	391	685	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	60	12	28	64	9	387	11	265	13	425	745	24
Lane Group Flow (vph)	0	100	0	0	73	387	11	278	0	425	769	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	2 9		1	6 1	
Permitted Phases	4	4		8	8	8	2 9	2 9		6 1	6 1	
Detector Phases	4	4		8	8	8	9	2 9		1	6 1	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	17.0	17.0	0.0	17.0	17.0	17.0	10.0	38.0	0.0	43.0	71.0	0.0
Total Split (%)	14.8%	14.8%	0.0%	14.8%	14.8%	14.8%	8.7%	33.0%	0.0%	37.4%	61.7%	0.0%
Maximum Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			36.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		14.3			14.2	14.2	34.0	36.0		67.0	69.0	
Actuated g/C Ratio		0.13			0.13	0.13	0.30	0.32		0.59	0.61	
v/c Ratio		0.37			0.29	0.56	0.06	0.25		0.62	0.67	
Control Delay		43.4			48.7	7.9	28.1	29.3		12.5	3.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		5.7	3.0	
Total Delay		43.4			48.7	7.9	28.1	29.3		18.2	6.7	
LOS		D			D	A	C	C		B	A	
Approach Delay		43.4			14.4			29.3			10.8	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D		B					C			B	
90th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			36.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			36.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
50th %ile Green (s)	10.0	10.0		10.0	10.0	10.0	3.0			36.0		
50th %ile Term Code	Max	Max		Max	Max	Max	Max			Hold		
30th %ile Green (s)	9.5	9.5		9.1	9.1	9.1	3.0			36.0		
30th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
10th %ile Green (s)	7.1	7.1		7.0	7.0	7.0	3.0			36.0		
10th %ile Term Code	Gap	Gap		Gap	Gap	Gap	Max			Hold		
Queue Length 50th (ft)		59			50	0	6	79		170	46	
Queue Length 95th (ft)		113			96	48	20	115		m180	m40	
Internal Link Dist (ft)		1072			1692			1410			270	
Turn Bay Length (ft)						150	150			250		
Base Capacity (vph)		284			262	712	194	1123		690	1148	
Starvation Cap Reductn		0			0	0	0	0		204	268	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.35			0.28	0.54	0.06	0.25		0.87	0.87	

Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 113.5  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 15.8  
 Intersection Capacity Utilization 60.5%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 115  
 70th %ile Actuated Cycle: 115  
 50th %ile Actuated Cycle: 115  
 30th %ile Actuated Cycle: 113.6  
 10th %ile Actuated Cycle: 109.1

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611

#2 #2 ↖ ↗ ø3 ø2	#1 ↘ ø1	#2 ↖ ↗ ø5	#1 ↖ ↗
28 s	43 s	34 s	10 s
#1 #2 ↘ ↙ ø6	#2 ↖ ↗ ø3	#2 ↖ ↗ ø7	#1 #1 ↖ ↗ ø4 ø8
28 s	26 s	17 s	17 s 17 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frnt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1863	1961	1522	1739	1857	0	1801	1895	1611	0	3601	1611
Flt Permitted	0.950			0.950			0.158				0.747	
Satd. Flow (perm)	1863	1961	1522	1739	1857	0	299	1895	1611	0	2690	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240						208			231
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	191	124	221	340	124	1	293	271	191	4	537	325
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	208	135	240	370	135	1	318	295	208	4	584	353
Lane Group Flow (vph)	208	135	240	370	136	0	318	295	208	0	588	353
Turn Type	Split		Perm custom				pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5		6	
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	17.0	17.0	17.0	26.0	26.0	0.0	44.0	72.0	34.0	28.0	28.0	28.0
Total Split (%)	14.8%	14.8%	14.8%	22.6%	22.6%	0.0%	38.3%	62.6%	29.6%	24.3%	24.3%	24.3%
Maximum Green (s)	10.0	10.0	10.0	19.0	19.0				27.0	21.0	21.0	21.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	15.0	15.0	15.0	24.0	24.0		66.5	68.5	30.5		26.0	26.0
Actuated g/C Ratio	0.13	0.13	0.13	0.21	0.21		0.59	0.60	0.27		0.23	0.23
v/c Ratio	0.85	0.52	0.59	1.01	0.35		0.45	0.26	0.36		0.95	0.65
Control Delay	77.6	54.3	12.2	94.0	41.5		23.0	7.0	13.8		70.6	19.9
Queue Delay	0.0	0.0	0.1	54.1	0.0		0.8	0.5	0.3		0.0	0.0
Total Delay	77.6	54.3	12.3	148.2	41.5		23.8	7.5	14.1		70.6	19.9
LOS	E	D	B	F	D		C	A	B		E	B
Approach Delay		45.3			119.5			15.5			51.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			F			B			D	
90th %ile Green (s)	10.0	10.0	10.0	19.0	19.0				27.0	21.0	21.0	21.0
90th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
70th %ile Green (s)	10.0	10.0	10.0	19.0	19.0				27.0	21.0	21.0	21.0
70th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
50th %ile Green (s)	10.0	10.0	10.0	19.0	19.0				27.0	21.0	21.0	21.0
50th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
30th %ile Green (s)	10.0	10.0	10.0	19.0	19.0				25.6	21.0	21.0	21.0
30th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
10th %ile Green (s)	10.0	10.0	10.0	19.0	19.0				21.1	21.0	21.0	21.0
10th %ile Term Code	Max	Max	Max	Max	Max				Hold	Max	Max	Max
Queue Length 50th (ft)	153	95	0	~291	87		120	60	7		228	78
Queue Length 95th (ft)	#286	160	76	#479	147		167	67	64		#345	184
Internal Link Dist (ft)		1950			1023				270		2032	
Turn Bay Length (ft)			280				250		250			100
Base Capacity (vph)	246	259	409	368	393		709	1141	603		616	547
Starvation Cap Reductn	0	0	0	0	0		168	479	104		0	0
Spillback Cap Reductn	0	0	6	48	0		0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.85	0.52	0.60	1.16	0.35		0.59	0.45	0.42		0.95	0.65

Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 113.5  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 52.0  
 Intersection Capacity Utilization 67.1%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 115  
 70th %ile Actuated Cycle: 115  
 50th %ile Actuated Cycle: 115  
 30th %ile Actuated Cycle: 113.6  
 10th %ile Actuated Cycle: 109.1  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: SR 940 & SR 611

#2 #2 ↖ ↗ ø9 ø2	#1 ↘ ø1	#2 ↖ ↗ ø5	#1 ↖ ↗
28 s	43 s	34 s	10 s
#1 #2 ↘ ↗ ø6	#2 ↖ ↗ ø3	#2 ↖ ↗ ø7	#1 #1 ↖ ↗ ø4 ø8
28 s	26 s	17 s	17 s 17 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘			↑↑	↑↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	66	438	123	393	766	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	476	134	427	833	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1324	427	854			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1324	427	854			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	41	17	83			
cM capacity (veh/h)	122	576	781			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	548	276	285	555	299	
Volume Left	72	134	0	0	0	
Volume Right	476	0	0	0	22	
cSH	387	781	1700	1700	1700	
Volume to Capacity	1.41	0.17	0.17	0.33	0.18	
Queue Length 95th (ft)	688	15	0	0	0	
Control Delay (s)	228.5	6.1	0.0	0.0	0.0	
Lane LOS	F	A				
Approach Delay (s)	228.5	3.0		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			64.6			
Intersection Capacity Utilization			76.9%		ICU Level of Service	D
Analysis Period (min)			15			

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↑↓		↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.928			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3284	0	1770	3539
Fl <sub>t</sub> Permitted	0.950				0.114	
Satd. Flow (perm)	1770	1583	3284	0	212	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		68	283			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	360	63	453	418	228	976
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	68	492	454	248	1061
Lane Group Flow (vph)	391	68	946	0	248	1061
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	34.0	34.0	35.0	0.0	21.0	56.0
Total Split (%)	37.8%	37.8%	38.9%	0.0%	23.3%	62.2%
Maximum Green (s)	27.0	27.0	27.0		13.0	48.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	25.4	25.4	33.3		52.2	52.2
Actuated g/C Ratio	0.30	0.30	0.39		0.61	0.61
v/c Ratio	0.74	0.13	0.65		0.62	0.49
Control Delay	36.6	6.3	18.1		21.7	10.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.6	6.3	18.1		21.7	10.9
LOS	D	A	B		C	B
Approach Delay	32.1		18.1			13.0
Approach LOS	C		B			B



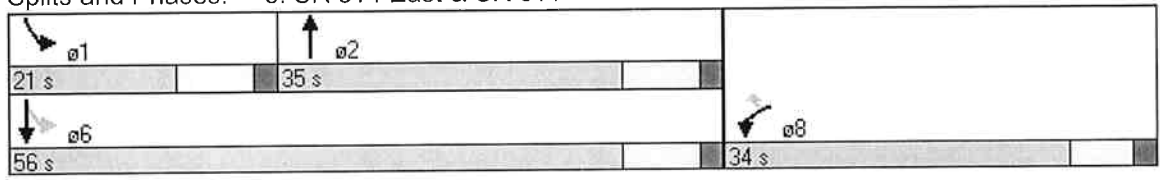
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	27.0	27.0	27.0		13.0	48.0
90th %ile Term Code	Max	Max	MaxR		Max	MaxR
70th %ile Green (s)	27.0	27.0	27.0		13.0	48.0
70th %ile Term Code	Max	Max	MaxR		Max	MaxR
50th %ile Green (s)	24.0	24.0	27.9		12.1	48.0
50th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
30th %ile Green (s)	20.1	20.1	30.7		9.3	48.0
30th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
10th %ile Green (s)	14.7	14.7	32.8		7.2	48.0
10th %ile Term Code	Gap	Gap	Hold		Gap	MaxR
Queue Length 50th (ft)	188	0	158		68	160
Queue Length 95th (ft)	289	28	244		153	228
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	590	573	1451		428	2158
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.66	0.12	0.65		0.58	0.49

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 85.6  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 18.0  
 Intersection Capacity Utilization 68.5%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 90  
 50th %ile Actuated Cycle: 87  
 30th %ile Actuated Cycle: 83.1  
 10th %ile Actuated Cycle: 77.7

Intersection LOS: B  
ICU Level of Service C

Splits and Phases: 5: SR 314 East & SR 611





Lanes, Volumes, Timings  
3: SR 940 & Long Pond Road

2017 No-Build Afternoon Peak  
11/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	12	12	12	12	12	12	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.985			0.986			0.891			0.972	
Flt Protected	0.950			0.950				0.992			0.968	
Satd. Flow (prot)	1711	1835	0	1770	3490	0	0	1646	0	0	1811	0
Flt Permitted	0.304			0.087				0.932			0.379	
Satd. Flow (perm)	547	1835	0	162	3490	0	0	1547	0	0	709	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			27			188			12	
Headway Factor	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1167			4199			2546			2206	
Travel Time (s)		26.5			95.4			57.9			50.1	
Volume (vph)	20	587	67	435	786	81	61	8	285	53	11	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	638	73	473	854	88	66	9	310	58	12	18
Lane Group Flow (vph)	22	711	0	473	942	0	0	385	0	0	88	0
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	23.0	23.0		11.0	23.0		22.0	22.0		22.0	22.0	
Total Split (s)	46.0	46.0	0.0	29.0	75.0	0.0	25.0	25.0	0.0	25.0	25.0	0.0
Total Split (%)	46.0%	46.0%	0.0%	29.0%	75.0%	0.0%	25.0%	25.0%	0.0%	25.0%	25.0%	0.0%
Maximum Green (s)	39.0	39.0		22.0	68.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	42.0	42.0		71.0	71.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.42	0.42		0.71	0.71		0.21	0.21		0.21	0.21	
v/c Ratio	0.10	0.92		0.91	0.38		0.81	0.81		0.56	0.56	
Control Delay	19.0	45.9		40.5	3.9		34.2	34.2		45.5	45.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.0	45.9		40.5	3.9		34.2	34.2		45.5	45.5	
LOS	B	D		D	A		C	C		D	D	
Approach Delay		45.1			16.1		34.2	34.2		45.5	45.5	
Approach LOS		D			B		C	C		D	D	
Queue Length 50th (ft)	8	415		239	70		122	122		43	43	
Queue Length 95th (ft)	25	#653		#424	111		#277	#277		#105	#105	
Internal Link Dist (ft)		1087			4119		2466	2466		2126	2126	
Turn Bay Length (ft)												
Base Capacity (vph)	230	775		517	2486		473	473		158	158	



HCM Unsignalized Intersection Capacity Analysis  
 6: SR 940 & I-380 SB Ramps

2017 No-Build Afternoon Peak  
 11/22/2005



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑↑						↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	747	177	0	1188	207	0	0	0	57	0	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	812	192	0	1291	225	0	0	0	62	0	124
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1516			1004			1582	2328	812	2216	2408	758
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1516			1004			1582	2328	812	2216	2408	758
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	0	100	65
cM capacity (veh/h)	437			685			47	37	322	24	33	349
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1							
Volume Total	812	192	861	655	186							
Volume Left	0	0	0	0	62							
Volume Right	0	192	0	225	124							
cSH	1700	1700	1700	1700	64							
Volume to Capacity	0.48	0.11	0.51	0.39	2.92							
Queue Length 95th (ft)	0	0	0	0	474							
Control Delay (s)	0.0	0.0	0.0	0.0	1004.4							
Lane LOS					F							
Approach Delay (s)	0.0		0.0		1004.4							
Approach LOS					F							
<b>Intersection Summary</b>												
Average Delay			69.0									
Intersection Capacity Utilization			56.3%		ICU Level of Service				B			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
9: SR 940 & I-380 NB Ramps

2017 No-Build Afternoon Peak  
11/22/2005



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕	↗	↖		↗			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	10	12	10	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts						0.850			0.850			
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	3404	0	0	3421	1583	1652	0	1478	0	0	0
Flt Permitted		0.658					0.950					
Satd. Flow (perm)	0	2251	0	0	3421	1583	1652	0	1478	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						177			173			
Headway Factor	1.00	1.04	1.00	1.00	1.04	1.00	1.09	1.00	1.09	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3681			2505			2531			2254	
Travel Time (s)		83.7			56.9			57.5			51.2	
Volume (vph)	75	740	0	0	1112	163	283	0	159	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	804	0	0	1209	177	308	0	173	0	0	0
Lane Group Flow (vph)	0	886	0	0	1209	177	308	0	173	0	0	0
Turn Type	Perm					Perm custom		custom				
Protected Phases		4			8							
Permitted Phases	4					8	2		2			
Minimum Split (s)	22.5	22.5			22.5	22.5	22.5		22.5			
Total Split (s)	62.1	62.1	0.0	0.0	62.1	62.1	37.9	0.0	37.9	0.0	0.0	0.0
Total Split (%)	62.1%	62.1%	0.0%	0.0%	62.1%	62.1%	37.9%	0.0%	37.9%	0.0%	0.0%	0.0%
Maximum Green (s)	55.6	55.6			55.6	55.6	31.4		31.4			
Yellow Time (s)	4.5	4.5			4.5	4.5	4.5		4.5			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0		2.0			
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0		5.0			
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0		11.0			
Pedestrian Calls (#/hr)	0	0			0	0	0		0			
Act Effct Green (s)		58.1			58.1	58.1	33.9		33.9			
Actuated g/C Ratio		0.58			0.58	0.58	0.34		0.34			
v/c Ratio		0.68			0.61	0.18	0.55		0.28			
Control Delay		7.5			15.2	1.9	31.4		5.0			
Queue Delay		0.0			0.0	0.0	0.0		0.0			
Total Delay		7.5			15.2	1.9	31.4		5.0			
LOS		A			B	A	C		A			
Approach Delay		7.5			13.5							
Approach LOS		A			B							
Queue Length 50th (ft)		76			245	0	158		0			
Queue Length 95th (ft)		m124			310	27	245		45			
Internal Link Dist (ft)		3601			2425			2451			2174	
Turn Bay Length (ft)												
Base Capacity (vph)		1308			1988	994	560		615			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0			0	0	0		0			
Spillback Cap Reductn		0			0	0	0		0			
Storage Cap Reductn		0			0	0	0		0			
Reduced v/c Ratio		0.68			0.61	0.18	0.55		0.28			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 13.0 Intersection LOS: B  
 Intersection Capacity Utilization 79.1% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 9: SR 940 & I-380 NB Ramps**

ø2	ø4
37.9 s	62.1 s
	ø8
	62.1 s



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	2	20	255	147	93	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	22	277	160	101	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	1202					
pX, platoon unblocked						
vC, conflicting volume	815	101	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	815	101	101			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	81			
cM capacity (veh/h)	282	954	1491			
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	2	22	185	252	101	53
Volume Left	2	0	185	92	0	0
Volume Right	0	22	0	0	0	53
cSH	282	954	1491	1491	1700	1700
Volume to Capacity	0.01	0.02	0.19	0.19	0.06	0.03
Queue Length 95th (ft)	1	2	17	17	0	0
Control Delay (s)	17.8	8.9	8.0	4.0	0.0	0.0
Lane LOS	C	A	A	A		
Approach Delay (s)	9.7		5.6		0.0	
Approach LOS	A					
<b>Intersection Summary</b>						
Average Delay			4.4			
Intersection Capacity Utilization			27.6%		ICU Level of Service	A
Analysis Period (min)	15					



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↕	↕	↷
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	90	88	49	312	85	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	96	53	339	92	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)				460		
pX, platoon unblocked						
vC, conflicting volume	368	92	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	368	92	92			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	90	96			
cM capacity (veh/h)	583	947	1500			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	98	96	53	170	170	92	32
Volume Left	98	0	53	0	0	0	0
Volume Right	0	96	0	0	0	0	32
cSH	583	947	1500	1700	1700	1700	1700
Volume to Capacity	0.17	0.10	0.04	0.10	0.10	0.05	0.02
Queue Length 95th (ft)	15	8	3	0	0	0	0
Control Delay (s)	12.4	9.2	7.5	0.0	0.0	0.0	0.0
Lane LOS	B	A	A				
Approach Delay (s)	10.8		1.0			0.0	
Approach LOS	B						

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization	21.0%		ICU Level of Service A
Analysis Period (min)		15	

Lanes, Volumes, Timings  
3: SR 940 & Industrial Dr

2017 No-Build Afternoon Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗	↖	↑	↗	↖	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	16	12	13	13	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	50	50	4.0
Leading Detector (ft)		50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)		0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.998				0.850			0.850		0.874	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3532	0	1770	3539	1583	1770	2111	1583	1829	1682	0
Flt Permitted				0.154			0.129			0.654		
Satd. Flow (perm)	0	3532	0	287	3539	1583	240	2111	1583	1259	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				58			80		105	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	0.96	0.96	1.00
Link Speed (mph)		30				30		30			30	
Link Distance (ft)		1832			5000			2816			2672	
Travel Time (s)		41.6			113.6			64.0			60.7	
Volume (vph)	0	728	10	106	637	53	361	149	74	126	72	385
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	11	115	692	58	392	162	80	137	78	418
Lane Group Flow (vph)	0	802	0	115	692	58	392	162	80	137	496	0
Turn Type				pm+pt		pm+ov	pm+pt		Perm	pm+pt		
Protected Phases		4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2		2	6		
Detector Phases		4		3	8	1	5	2	2	1	6	
Minimum Initial (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)		23.0		11.0	23.0	9.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	0.0	26.0	0.0	11.0	37.0	9.0	22.0	44.0	44.0	9.0	31.0	0.0
Total Split (%)	0.0%	28.9%	0.0%	12.2%	41.1%	10.0%	24.4%	48.9%	48.9%	10.0%	34.4%	0.0%
Maximum Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
Yellow Time (s)		5.0		5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)		2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag		Lag		Lead		Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?		Yes		Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode		None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)		22.1		30.8	30.6	39.7	49.1	40.1	40.1	33.1	28.1	
Actuated g/C Ratio		0.25		0.34	0.35	0.45	0.56	0.46	0.46	0.38	0.32	
v/c Ratio		0.90		0.54	0.56	0.08	0.91	0.17	0.10	0.27	0.81	
Control Delay		47.7		29.4	24.9	4.1	48.4	15.4	4.0	13.8	35.2	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		47.7		29.4	24.9	4.1	48.4	15.4	4.0	13.8	35.2	
LOS		D		C	C	A	D	B	A	B	D	
Approach Delay		47.7			24.1			34.4			30.5	





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			C			C				C
90th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
90th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
70th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
70th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
50th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
50th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
30th %ile Green (s)		19.0		4.0	30.0	4.0	17.0	39.0	39.0	4.0	26.0	
30th %ile Term Code		Max		Max	Hold	Max	Max	MaxR	MaxR	Max	MaxR	
10th %ile Green (s)		19.0		0.0	19.0	4.0	12.4	39.0	39.0	4.0	30.6	
10th %ile Term Code		Max		Skip	Hold	Max	Gap	MaxR	MaxR	Max	Hold	
Queue Length 50th (ft)		234		44	160	0	164	54	0	36	213	
Queue Length 95th (ft)		#350		82	214	20	#333	93	24	65	#394	
Internal Link Dist (ft)		1752			4920			2736			2592	
Turn Bay Length (ft)												
Base Capacity (vph)		888		214	1298	747	444	964	767	507	610	
Starvation Cap Reductn		0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn		0		0	0	0	0	0	0	0	0	
Storage Cap Reductn		0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio		0.90		0.54	0.53	0.08	0.88	0.17	0.10	0.27	0.81	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.8  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 34.2  
 Intersection Capacity Utilization 87.2%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 90  
 70th %ile Actuated Cycle: 90  
 50th %ile Actuated Cycle: 90  
 30th %ile Actuated Cycle: 90  
 10th %ile Actuated Cycle: 79

Intersection LOS: C  
 ICU Level of Service E























# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: SR 940 & Industrial Dr

ø1	ø2	ø3	ø4
9 s	44 s	11 s	26 s
ø5	ø6	ø8	
22 s	31 s	37 s	

Lanes, Volumes, Timings  
6: SR 940 & Oak St

2017 No-Build Afternoon Peak  
11/23/2005

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frnt		0.983				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3539	1583	1770	0	1583	3433	0	1583
Flt Permitted	0.540			0.133			0.950			0.950		
Satd. Flow (perm)	1006	3479	0	248	3539	1583	1770	0	1583	3433	0	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				480			130			168
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		5000			3536			2736			2816	
Travel Time (s)		113.6			80.4			62.2			64.0	
Volume (vph)	202	619	78	300	326	442	33	0	120	240	0	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	673	85	326	354	480	36	0	130	261	0	168
Lane Group Flow (vph)	220	758	0	326	354	480	36	0	130	261	0	168
Turn Type	pm+pt			pm+pt		Perm custom			custom custom			custom
Protected Phases	7	4		3	8				2	6		6
Permitted Phases	4			8		8	2		2			6
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	22.0		22.0	22.0		22.0
Total Split (s)	16.0	30.0	0.0	25.0	39.0	39.0	23.0	0.0	23.0	22.0	0.0	22.0
Total Split (%)	16.0%	30.0%	0.0%	25.0%	39.0%	39.0%	23.0%	0.0%	23.0%	22.0%	0.0%	22.0%
Maximum Green (s)	9.0	23.0		18.0	32.0	32.0	17.0		17.0	16.0		16.0
Yellow Time (s)	5.5	5.5		5.5	5.5	5.5	3.0		3.0	3.0		3.0
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	3.0		3.0	3.0		3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0		5.0	5.0		5.0
Flash Dont Walk (s)		11.0			11.0	11.0	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)		0			0	0	0		0	0		0
Act Effct Green (s)	38.0	26.0		51.0	35.0	35.0	19.0		19.0	18.0		18.0
Actuated g/C Ratio	0.38	0.26		0.51	0.35	0.35	0.19		0.19	0.18		0.18
v/c Ratio	0.46	0.83		0.73	0.29	0.55	0.11		0.32	0.42		0.40
Control Delay	18.4	43.4		32.0	24.3	5.0	34.6		8.7	38.8		8.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	18.4	43.4		32.0	24.3	5.0	34.6		8.7	38.8		8.8
LOS	B	D		C	C	A	C		A	D		A
Approach Delay		37.8			18.4							
Approach LOS		D			B							
Queue Length 50th (ft)	75	236		139	84	0	19		0	76		0
Queue Length 95th (ft)	121	#315		#248	121	66	47		49	115		55
Internal Link Dist (ft)		4920			3456			2656			2736	
Turn Bay Length (ft)												
Base Capacity (vph)	474	914		446	1239	866	336		406	618		423
Starvation Cap Reductn	0	0		0	0	0	0		0	0		0





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕↕	↕	↕↕		↕	↕	
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	16	12	12	14	12	11	11	11	11	11	11
Storage Length (ft)	0		150	150		150	150		0	250		250
Storage Lanes	0		0	1		1	1		0	1		0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	5	5		50	5	5	50	5		50	5	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	1.00	1.00	1.00
Fr		0.981				0.850		0.995			0.989	
Flt Protected		0.963			0.961		0.950			0.950		
Satd. Flow (prot)	0	2084	0	0	1994	2850	1801	3543	0	1733	1875	0
Flt Permitted		0.963			0.961		0.105			0.105		
Satd. Flow (perm)	0	2084	0	0	1994	2850	199	3543	0	192	1875	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				728		2			5	
Headway Factor	1.00	0.85	1.00	1.00	0.92	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1152			1772			1490			350	
Travel Time (s)		26.2			40.3			29.0			6.8	
Volume (vph)	265	32	50	99	22	670	26	833	27	659	772	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	3%	2%	5%	2%	3%	8%	6%	2%	2%
Adj. Flow (vph)	288	35	54	108	24	728	28	905	29	716	839	65
Lane Group Flow (vph)	0	377	0	0	132	728	28	934	0	716	904	0
Turn Type	custom			custom		custom	pm+pt			pm+pt		
Protected Phases	4	4		8	8	8	9	29		1	61	
Permitted Phases	4	4		8	8	8	29	29		61	61	
Detector Phases	4	4		8	8	8	9	29		1	61	
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Minimum Split (s)	17.0	17.0		17.0	17.0	17.0	10.0			10.0		
Total Split (s)	26.0	26.0	0.0	17.0	17.0	17.0	10.0	50.0	0.0	52.0	92.0	0.0
Total Split (%)	17.9%	17.9%	0.0%	11.7%	11.7%	11.7%	6.9%	34.5%	0.0%	35.9%	63.4%	0.0%
Maximum Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0		
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0	4.0			4.0		
Recall Mode	None	None		None	None	None	None			None		
Act Effct Green (s)		24.0			15.0	15.0	46.0	48.0		88.0	90.0	
Actuated g/C Ratio		0.17			0.10	0.10	0.32	0.33		0.61	0.62	
v/c Ratio		1.08			0.64	0.77	0.18	0.80		1.10	0.78	
Control Delay		125.9			77.4	10.1	36.0	50.0		79.4	6.5	
Queue Delay		457.9			0.0	6.1	0.0	29.2		212.8	34.3	
Total Delay		583.8			77.4	16.2	36.0	79.2		292.2	40.8	
LOS		F			E	B	D	E		F	D	
Approach Delay		583.8			25.6			77.9			151.9	












Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		F			C			E				F
90th %ile Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
90th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
70th %ile Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
70th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
50th %ile Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
50th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
30th %ile Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
30th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
10th %ile Green (s)	19.0	19.0		10.0	10.0	10.0	3.0			45.0		
10th %ile Term Code	Max	Max		Max	Max	Max	Max			Max		
Queue Length 50th (ft)		~393			122	0	18	421		~725	96	
Queue Length 95th (ft)		#602			195	64	42	505		m#694	m109	
Internal Link Dist (ft)		1072			1692			1410			270	
Turn Bay Length (ft)						150	150			250		
Base Capacity (vph)		349			206	948	152	1174		648	1166	
Starvation Cap Reductn		0			0	0	0	0		197	314	
Spillback Cap Reductn		171			0	170	0	283		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		2.12			0.64	0.94	0.18	1.05		1.59	1.06	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 145  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.11  
 Intersection Signal Delay: 147.5  
 Intersection Capacity Utilization 92.5%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 145  
 70th %ile Actuated Cycle: 145  
 50th %ile Actuated Cycle: 145  
 30th %ile Actuated Cycle: 145  
 10th %ile Actuated Cycle: 145  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Commercial Drive & SR 611

 #2 #2 ø9	 #1 ø1	 #2 #2 ø5	 #1 ø1		
40 s	52 s	43 s	10 s		
 #1 #2 ø6	 #2 ø3	 #2 ø7	 #1 ø4	 #1 #1 ø8	
40 s	29 s	23 s	26 s	17 s	

Lanes, Volumes, Timings  
2: SR 940 & SR 611

2017 No-Build Afternoon Peak  
11/22/2005

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (ft)	12	12	11	10	11	10	11	11	11	11	11	11
Storage Length (ft)	0		280	0		80	250		250	0		100
Storage Lanes	1		1	0		1	1		1	0		1
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Leading Detector (ft)	50	5	5	5	5		50	5	5	50	5	5
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frnt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950				0.999	
Satd. Flow (prot)	1863	1961	1522	1739	1857	0	1801	1895	1611	0	3598	1611
Flt Permitted	0.950			0.950			0.105				0.722	
Satd. Flow (perm)	1863	1961	1522	1739	1857	0	199	1895	1611	0	2600	1611
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			434						365			198
Headway Factor	1.00	1.00	1.04	1.09	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Link Speed (mph)		25			35			35			35	
Link Distance (ft)		2030			1103			350			2112	
Travel Time (s)		55.4			21.5			6.8			41.1	
Volume (vph)	181	243	493	313	128	1	375	711	683	7	685	428
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	8%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	197	264	536	340	139	1	408	773	742	8	745	465
Lane Group Flow (vph)	197	264	536	340	140	0	408	773	742	0	753	465
Turn Type	Split		Perm custom				pm+pt		custom	Perm		Perm
Protected Phases	7	7		3	3		5 9	5 2 9	5		6	
Permitted Phases			7	3			5 2 9	5 9	5	6	6	6
Detector Phases	7	7	7	3	3		5 9	5 2 9	5	6	6	6
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0				10.0	17.0	17.0	17.0
Total Split (s)	23.0	23.0	23.0	29.0	29.0	0.0	53.0	93.0	43.0	40.0	40.0	40.0
Total Split (%)	15.9%	15.9%	15.9%	20.0%	20.0%	0.0%	36.6%	64.1%	29.7%	27.6%	27.6%	27.6%
Maximum Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0				3.0	3.0	3.0	3.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0				4.0	4.0	4.0	4.0
Recall Mode	None	None	None	None	None				None	Min	Min	Min
Act Effct Green (s)	21.0	21.0	21.0	27.0	27.0		89.0	91.0	41.0		38.0	38.0
Actuated g/C Ratio	0.14	0.14	0.14	0.19	0.19		0.61	0.63	0.28		0.26	0.26
v/c Ratio	0.73	0.93	0.91	1.05	0.40		0.59	0.65	1.03		1.11	0.82
Control Delay	75.7	98.8	32.4	119.2	56.0		44.3	7.7	71.5		115.9	41.1
Queue Delay	0.0	0.0	7.7	0.0	0.0		19.9	2.0	82.9		275.3	0.0
Total Delay	75.7	98.8	40.1	119.2	56.0		64.2	9.6	154.3		391.2	41.1
LOS	E	F	D	F	E		E	A	F		F	D
Approach Delay		62.7			100.7			77.0			257.5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E						F					
90th %ile Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
90th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
70th %ile Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
70th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
50th %ile Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
50th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
30th %ile Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
30th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
10th %ile Green (s)	16.0	16.0	16.0	22.0	22.0				36.0	33.0	33.0	33.0
10th %ile Term Code	Max	Max	Max	Max	Max				Max	Max	Max	Max
Queue Length 50th (ft)	181	250	101	~349	118		277	138	~405		~425	252
Queue Length 95th (ft)	#286	#421	#328	#549	187		m344	m157	m#482		#556	#429
Internal Link Dist (ft)	1950			1023			270			2032		
Turn Bay Length (ft)	280						250	250			100	
Base Capacity (vph)	270	284	592	324	346		686	1189	717		681	568
Starvation Cap Reductn	0	0	0	0	0		272	261	117		0	0
Spillback Cap Reductn	0	0	40	0	0		0	0	0		245	0
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	0
Reduced v/c Ratio	0.73	0.93	0.97	1.05	0.40		0.99	0.83	1.24		1.73	0.82












**Intersection Summary**

Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 145  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.11  
 Intersection Signal Delay: 124.0      Intersection LOS: F  
 Intersection Capacity Utilization 95.7%      ICU Level of Service F  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 145  
 70th %ile Actuated Cycle: 145  
 50th %ile Actuated Cycle: 145  
 30th %ile Actuated Cycle: 145  
 10th %ile Actuated Cycle: 145  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.



Splits and Phases: 2: SR 940 & SR 611

40 s	52 s	43 s	10 s		
40 s	29 s	23 s	26 s	17 s	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.980			
Fit Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3468	0	1770	3539
Fit Permitted	0.950				0.244	
Satd. Flow (perm)	1770	1583	3468	0	455	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		35	26			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	5596		2844			2950
Travel Time (s)	127.2		64.6			67.0
Volume (vph)	80	32	635	98	53	432
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	35	690	107	58	470
Lane Group Flow (vph)	87	35	797	0	58	470
Turn Type		Perm			pm+pt	
Protected Phases	8		2		1	6
Permitted Phases		8			6	
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	23.0	23.0	24.0		12.0	24.0
Total Split (s)	31.0	31.0	47.0	0.0	12.0	59.0
Total Split (%)	34.4%	34.4%	52.2%	0.0%	13.3%	65.6%
Maximum Green (s)	24.0	24.0	39.0		4.0	51.0
Yellow Time (s)	5.0	5.0	6.0		6.0	6.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	5.0	5.0	5.0			5.0
Flash Dont Walk (s)	11.0	11.0	11.0			11.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	12.9	12.9	58.3		67.0	66.5
Actuated g/C Ratio	0.15	0.15	0.66		0.72	0.76
v/c Ratio	0.33	0.13	0.34		0.13	0.18
Control Delay	31.2	10.8	7.7		4.1	3.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	31.2	10.8	7.7		4.1	3.3
LOS	C	B	A		A	A
Approach Delay	25.4		7.7			3.4
Approach LOS	C		A			A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
90th %ile Green (s)	12.6	12.6	39.0		4.0	51.0
90th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
70th %ile Green (s)	10.5	10.5	39.0		4.0	51.0
70th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
50th %ile Green (s)	9.0	9.0	39.0		4.0	51.0
50th %ile Term Code	Gap	Gap	MaxR		Max	MaxR
30th %ile Green (s)	7.6	7.6	65.6		0.0	65.6
30th %ile Term Code	Gap	Gap	Dwell		Skip	Dwell
10th %ile Green (s)	6.9	6.9	98.1		0.0	98.1
10th %ile Term Code	Gap	Gap	Dwell		Skip	Dwell
Queue Length 50th (ft)	36	0	94		6	27
Queue Length 95th (ft)	75	23	147		17	50
Internal Link Dist (ft)	5516		2764			2870
Turn Bay Length (ft)						
Base Capacity (vph)	480	454	2313		449	2684
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.18	0.08	0.34		0.13	0.18

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.7  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.34  
 Intersection Signal Delay: 7.6  
 Intersection Capacity Utilization 38.4%  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 78.6  
 70th %ile Actuated Cycle: 76.5  
 50th %ile Actuated Cycle: 75  
 30th %ile Actuated Cycle: 88.2  
 10th %ile Actuated Cycle: 120

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 5: SR 314 East & SR 611

