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Powder Mountain Resort

Transportation Master Plan

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Executive Summary

Powder Mountain Resort is located in the mountains east of Ogden and is accessed via SR-39 (Ogden Canyon Road) and SR-158. Initially this report provides information of the existing conditions of the surrounding roadways and intersections. Intersection traffic volumes were collected in January 2014 during the weekday and weekend to establish a traffic baseline. The traffic data was analyzed using Synchro 8 software following the *Highway Capacity Manual* methodology to perform the level of service analysis. The surrounding roadways were evaluated for safety concerns and no crash patterns were identified.

The proposed development will be built in two stages with an anticipated completion date of 2019 for Stage 1 and a completion date of 2025 for Stage 2. The future development proposes resort hotels, recreational single family homes, nests (condominiums) and employee housing. Stage 1 proposed development includes 240 resort hotel units, 18 corporate retreat units, 60 recreational homes, 45 nests, 30 hostel units, and 25 multi-family units for a total of 418 dwelling units. Stage 2 would add another 160 resort hotel units, 72 corporate retreat units, 145 recreational homes, 126 nests, and 60 multi-family units totaling another 563 dwelling units. Six new ski lifts will be added over the next five years and one existing lift will be replaced. The proposed development will provide an array of amenities to provide for most of the guest's wants and needs while remaining on the premises. Estimated percentages of capture rates of internal trips were applied to estimate the reduction of the number of external trips. Stage 1 generates an estimated 680 weekday and 1680 Saturday daily trips. Stage 2 will generate an estimated 580 weekday and 1,450 Saturday daily trips. Approximately 60 percent of the trips will access the site through Ogden Canyon.

Background traffic is anticipated to grow approximately one percent based upon the historical traffic patterns of the surrounding roadways. The existing study intersections (SR-39/Valley DR.; SR-39/SR-158 and SR-158/Route 3460) currently operate at a level of service B during the week and LOS C/D on Saturdays. In the future when Stage 1 development is completed and the generated trips are added to the surrounding roadway system, the LOS of the study intersections declines to B/C during the week and LOS D, E or F on Saturdays. In 2025 the LOS remains unchanged during the week and declines even further to LOS E or F on Saturday. Highway operations indicate the roadways will operate at LOS B or C before the additional resort trips and the same LOS after the addition of the trips. To bring the LOS back into compliance with LOS C, PEC recommends installing a traffic signal at SR-39/SR-158 and SR-158/Route 3460 intersections with an option for a roundabout at the SR-158/Route 3460 intersection. PEC also recommends installing left-turn median channelization on SR-39 for the left-turning movement from Valley Drive.

The three Powder Mountain parking lots provide approximately 600 parking spaces that are utilized approximately 17 percent during the weekdays and 75 percent on the weekends. The two auxiliary lots provide an additional 135 parking spaces that are typically utilized 30 percent during weekdays and 50 percent during the weekends. Powder Mountain will provide an internal shuttle system and team with Utah Transit Authority (UTA) to help reduce travel demand on the existing roadways.

Powder Mountain will strive to achieve transportation sustainability by providing on-mountain accommodations that allow residents and guests to drive to the resort and stay for multiple days instead of making trips back and forth every day.

I. Existing Conditions (2014)

A. Roadway System

Major roadways that serve the Powder Mountain Resort area are illustrated in Figure 1: Existing Traffic Conditions. The primary roadways are outlined below:

- SR-39 is a two-lane highway providing access from Ogden City to Eden/Huntsville area. The speed limit ranges from 30 mph to 50 mph from Valley Drive (MP 8.68) at the mouth of the canyon to Junction SR-158 (MP 13.792) at the west end of Pineview Reservoir. The lanes are 12 feet wide with one-two foot paved shoulders and one-two foot gravel shoulders. The roadway has a gentle grade of 2 percent from the mouth of Ogden Canyon to Junction SR-158.
- SR-158 is a rural two-lane highway that provides access to Powder Mountain Resort, passing through Eden. From Junction SR-39 (MP 0.0) to Route 3460 (MP 4.337), the speed limit ranges from 40 mph to 50 mph. The grade is relative flat at 0.3 percent in this section. From Eden to Powder Mountain Resort (MP 4.337 to MP 11.691), the speed limit ranges from 15 mph to 40 mph and the grade averages 9 percent. The lanes are 12 feet wide with one foot paved shoulders and one-two foot gravel shoulders.
- Route 3460 (SR-162), is a two-lane rural highway between Junction SR-158 (MP 0.0) west of Eden and 4100 North (MP 3.028) in Liberty. The posted speed limit of is 40 mph and the grade is 1 percent between the two communities. The lanes are 12 feet wide with one-three foot paved shoulders and one-two foot gravel shoulders.
- Route 3464 (SR-158), is a two-lane rural highway that loops through Eden beginning at SR-158 (MP 0.0) via 5500 East and 2200 North back to Junction SR-158 (MP 1.396) west of Eden. The posted speed limit of is 40 mph and the grade is 0.5 percent. The lanes are 12 feet wide with one foot paved shoulders and one-two foot gravel shoulders.

B. Traffic Volumes

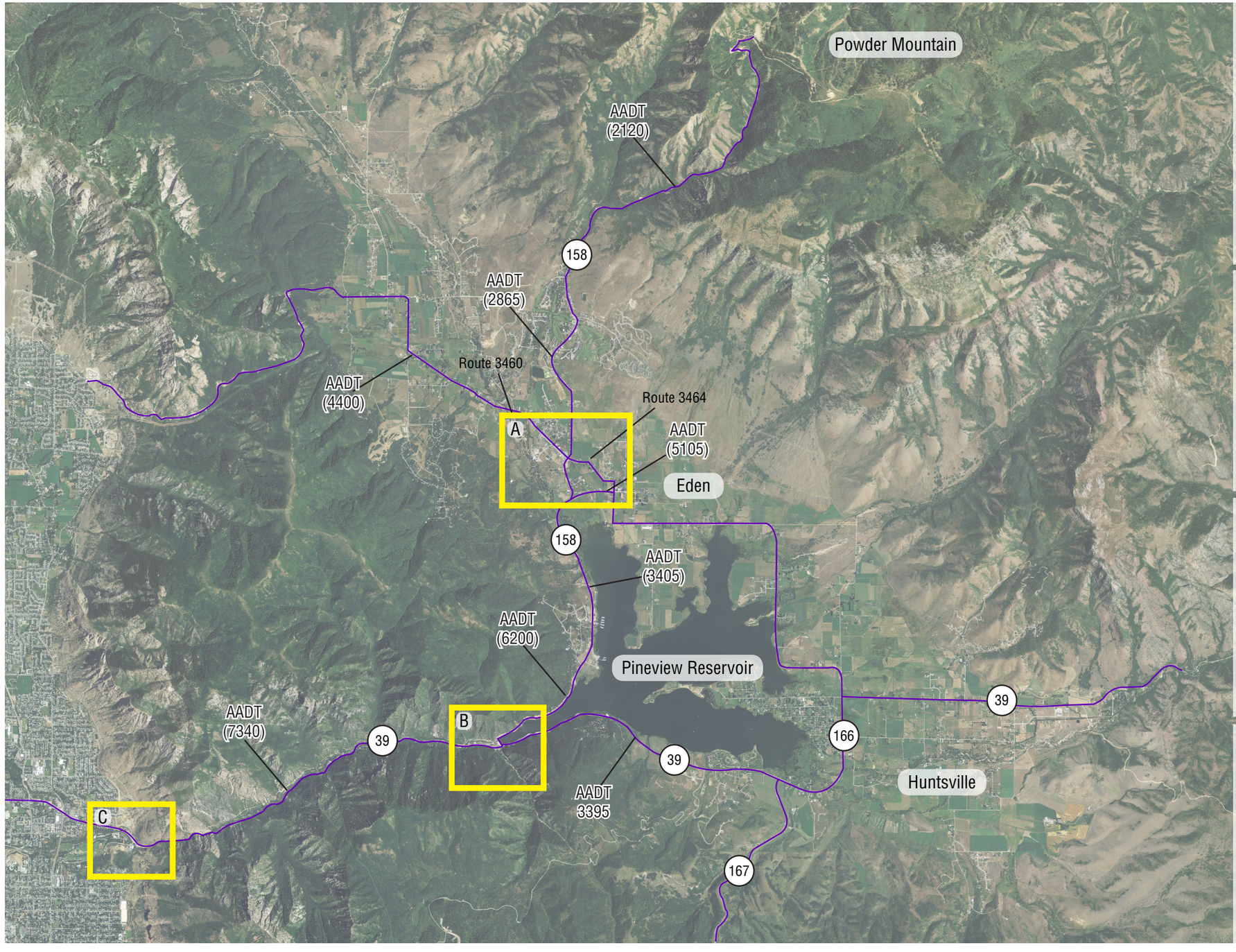
Daily traffic volumes along SR-39, SR-158, and SR-162 were obtained from UDOT traffic data. The latest annual average daily traffic (AADT) volumes are shown in Table 1: Existing Annual Average Daily Traffic Volumes and Figure 1: Existing Traffic Conditions. All volumes represent moderate traffic levels that are within the capacity of two lane roads.

Table 1: Existing Annual Average Daily Traffic Volumes

Road	Location	2012 Weekday Volume
SR-39	West of SR-158	7,340
	East of SR-158	3,395
SR-158	North of SR-39 (MP 0.0 to 3.778)	6,200
	South of Route 3460 (MP 3.778 to 4.337)	3,405
	North of Route 3460 through Wolf Creek Development (MP 4.337 to 8.181)	2,865
	North of Wolf Creek Development to Summit (MP 8.181 to 11.691)	2,120
Route 3460	West of SR-158	4,400
Route 3464 (SR-158 via 2200 N & 5500 E)	East of SR-158	5,105

Figure 1: Existing Traffic Conditions

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study



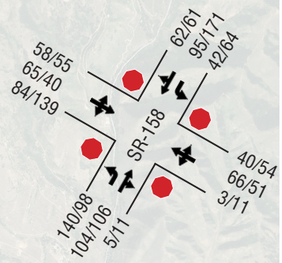
Study Intersections
State Route
Highway
AADT (xxxx) Average Annual Daily Traffic

0 1.25 2.5
Miles

N

A

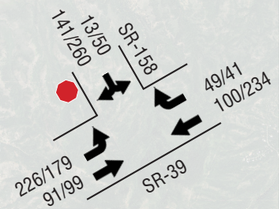
SR-158/SR-162
Weekday: LOS B
Saturday: LOS C



Stop Sign
xx/xx Peak Hour Traffic (Weekday/ Saturday)

B

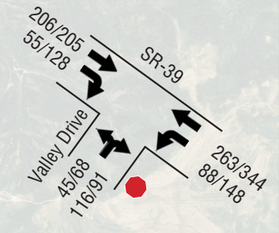
SR-39/SR-158
Weekday: LOS A
Saturday: LOS A



Stop Sign
xx/xx Peak Hour Traffic (Weekday/ Saturday)

C

SR-39/Valley Drive
Weekday: LOS A
Saturday: LOS A



Stop Sign
xx/xx Peak Hour Traffic (Weekday/ Saturday)

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C. Highway and Intersection Operations

Level of Service (LOS) Analysis Methodology

The *Highway Capacity Manual* (HCM) (Transportation Research Board [TRB], 2010) presents operational, design, and planning capacity analysis techniques for a broad range of transportation facilities, as well as procedures for analyzing streets and highways. In order to quantify the impact that the proposed development will have on the surrounding transportation system, an assessment and analysis was performed for the existing traffic conditions on the highways and at the intersections.

Intersections

Following the HCM methodology, the intersections were given a level of service (LOS) from A through F. The concept of levels of service uses qualitative measures that characterize operational conditions within a traffic stream and perception of these conditions by motorists and passengers.

The descriptions of individual levels of service characterize these conditions in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. There are six levels of service describing these conditions, ranging from A to F, which have been standardized by the TRB. LOS A represents a free-flowing traffic condition where motorists are affected very little by other motorists; motorists have a high degree of convenience, and freedom to select desired speeds. LOS F is characterized by congested flow conditions and stoppages as the amount of traffic approaching a point exceeds the amount that can pass that point. The various levels of service and associated delay relationships are summarized in Table 2: Two-Way and All-Way Stop-Controlled Intersections.

Table 2: Two-Way and All-Way Stop-Controlled Intersections

LOS by Volume-to-Capacity Ratio v/c≤1.0	Description of Traffic Conditions	Control Delay (s/veh)
A	Free Flow / Insignificant Delay	0 ≤ 10
B	Stable Operations / Minimum Delays	>10 and ≤ 15
C	Stable Operations / Acceptable Delays	>15 and ≤ 25
D	Approaching Unstable Flows / Tolerable Delays	>25 and ≤ 35
E	Unstable Operations / Significant Delays Can Occur	>35 and ≤ 50
F	Forced Flows / Unpredictable Flows / Excessive Delays Occur	>50

Source: *Highway Capacity Manual*
Note:
Two-Way Stop-Controlled intersections - the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.
All-Way Stop-Controlled intersections - for approaches and intersection-wide assessment, LOS is defined solely by control delay.

Two-lane Highways

Three measures of effectiveness are incorporated into the methodology to determine automobile LOS. Passing capacity and passing demand have a significant impact on actual operations and driver perceptions of service.

The HCM states:

> At LOS A, motorists experience high operating speeds on Class I highways and little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed would be controlled primarily by roadway conditions. A small amount of platooning would be expected. On Class III highways, drivers should be able to maintain operating speeds close or equal to the free-flow speed (FFS) of the facility. At LOS E, demand is approaching capacity. Passing on Class I and II highways is virtually impossible, and percent time-spent following (PTSF) is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds the FFS. The lower limit of this LOS represents capacity. LOS F exists whenever demand flow in one or both directions exceeds the capacity of the segment. Operating conditions are unstable, and heavy congestion exists on all classes of two-lane highway.

The various levels of service and demand associated with average travel speed (ATS), PTSF and percent of free-flow speed (PFFS) are summarized in Table 3: Level of Service for Two-Lane Highways.

Table 3: Level of Service for Two-Lane Highways

LOS	Class I Highways		Class II Highway	Class III Highway
	ATS (mi/h)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50-55	>35-50	>40-55	>83.3-91.7
C	>45-50	>50-65	>55-70	>75.0-83.3
D	>40-45	>65-80	>70-85	>66.7-75.0
E	≤40	>80	>85	≤66.7

Source: *Highway Capacity Manual*

Study Intersections

Existing traffic operations were analyzed at each study intersection using Synchro 8 software which follows the HCM methodology to perform the analysis. Figure 1: Existing Traffic Conditions, shows the turning movement volumes used to analyze the 2014 existing conditions along with the existing LOS for the following intersections: SR-39 / Valley Drive; SR-39 / SR-158 and SR-158 / Route 3460. Corresponding Synchro 8 reports can be found in Appendix A – HCM Analyses.

Table 4: Existing (2014) Level of Service Summary shows the existing LOS at the study intersections for weekday and Saturday peak periods.

Table 4: Existing (2014) Level of Service Summary

Intersection		Minor Street		Overall Intersection
Description/Control	Peak Period	LOS/Control Delay (s)	Movement	Delay (s/veh)
SR-39/Valley Drive NE/Stop	Weekday AM	B/11.1	NELR	3.7
	Weekday PM	B/12.9	NELR	3.6
	Saturday PM	D/28.2	NELR	6.3
SR-39/SR-158 S/Stop	Weekday AM	B/10.5	SLR	5.8
	Weekday PM	B/10.8	SLR	5.4
	Saturday PM	C/19.9	SLR	8.7
				LOS/Delay (s/veh)
SR-158/Route 3460 All-Way Stop	Weekday AM	na	na	B/10.6
	Weekday PM	na	na	B/14.5
	Saturday PM	na	na	C/15.9

NELR = Northeast shared left/right lane; SLR = South shared left/right lane; s = seconds; s/veh = seconds/vehicle

Traffic Counts

In order to quantify the impact the proposed development will have on the surrounding roadway network, a traffic survey was performed at each study intersection. Weekday intersection data was collected on January 21, 2014 and Saturday intersection data on January 18, 2014 by L2 Data Collection (see Appendix B – 2014 Traffic Volumes).

D. Safety Assessment

PEC obtained UDOT crash records from 2008 – 2012 for several state routes in the area, in order to analyze crash patterns and identify potential safety issues. The roads for which crash data were obtain include the following:

- SR-39, milepost (MP) 8.68 to MP 13.792; MP 13.792 to MP 16.56
- SR-158, MP 0.0 to MP 4.337; MP 4.337 to MP 11.69
- Route 3460, MP 0.0 to MP 3.03
- Route 3464, MP 0.0 MP 1.40

The records were then analyzed to determine crash patterns along each corridor in order to determine roadway sections requiring further review for improvements which could help to reduce crash frequency and severity. UDOT classifies each crash type into one of five categories based on the severity of the crash. The severity rates are as follows:

1. Property Damage Only
2. Possible Injury
3. Non-Incapacitating
4. Incapacitating
5. Fatal

Special consideration was given to severe crashes (category four or five) along with the manner of collision of these crash types. Each of these highway segments are summarized in the following sections. Included, is the calculation of the average crash rate. This value was determined by calculating how many crashes occurred per 1 million vehicle miles traveled. The crash rates for each of these highway segments were compared to the average

SR-39

Beginning at the mouth of Ogden Canyon (MP 8.68), SR-39 extends eastward through the canyon to Huntsville. This segment of SR-39 provides access to the Powder Mountain Resort from Ogden. There were nine severe crashes on the segment of SR-39 from the mouth of Ogden Canyon (MP 8.68) to SR-158 Junction (MP 13.792). Three of those nine severe crashes occurred at the SR-158 Junction but were all of a different type thus not establishing any crash pattern that could be mitigated. SR-39 experiences an average of 1.79 crashes per 1 million vehicle-miles traveled on SR-39 between MP 8.68 and MP 13.792. The *UDOT Average Crash Rates 2007-2011* shows an average crash rate of 1.47 crashes per 1 million vehicle-miles traveled for a "principal arterial". The average crash rate of this segment of SR-39 is slightly higher than the state average crash rate.

SR-158

SR-158 begins at the junction with SR-39 near the southwest corner of Pineview Reservoir, heads north to Eden, and continues northward to Powder Mountain Resort. There were 51 crashes on the segment of SR-158 between the SR-39 Junction (MP 0.0) and Route 3460 MP (4.337) with no severe crashes and an average crash rate of 1.68 crashes per 1 million vehicle-miles traveled. In the segment of SR-158 (MP 4.337) from the intersection of Route 3460 to the top of the mountain (MP 11.691) there were 37 crashes of which three were severe crashes. Each severe crash was an individual event in different locations with no crash pattern established. The average crash rate for this segment was 1.38 crashes per 1 million vehicle-miles traveled, lower than the UDOT average crash rate. The *UDOT Average Crash Rates 2007-2011* shows an average crash rate of 1.98 crashes per 1 million vehicle-miles travelled for a "major collector".

Route 3460

Route 3460 (SR-162) is the main connection between Eden and Liberty. There were 18 crashes with three individual severe crashes in different locations with no established crash pattern. Route 3460 experiences an average crash rate of 0.93 crashes per 1 million vehicle-miles traveled, lower than the UDOT average crash rate. The *UDOT Average Crash Rates 2007-2011* shows an average crash rate of 1.98 crashes per 1 million vehicle-miles travelled for a "major collector".

Route 3464

Route 3464 is the loop connection through Eden. There were nine crashes with one severe crash and no established crash pattern associated with this crash. Route 3464 experiences an average crash rate of 0.86 crashes per 1 million vehicle-miles traveled, lower than the UDOT average crash rate. The *UDOT Average Crash Rates 2007-2011* shows an average crash rate of 1.98 crashes per 1 million vehicle-miles travelled for a "major collector".

II. Resort Traffic Projections

This section documents the processes used to develop traffic projections for the Powder Mountain Resort Master Transportation Plan.

A. Background

The Powder Mountain Resort Master Transportation Plan defines future operation improvements anticipated for Powder Mountain ski area. Three key trip-generating assumptions that were used when forecasting resort trips: 1) commercial development functions primarily as a service to day skiers, resort guests and local residents so a portion of commercial trips will remain internal to the resort; 2) as the resort grows, the number of day skiers coming from Ogden, Salt Lake City, and other off-mountain areas will growth approximately one percent a year over the next eleven years; and 3) it is anticipated that 100 percent of the resort guests and skiers (90 % from outside the area and 10 % from local areas) that come as part of the new development will stay approximately one week which will dramatically reduce the number of day visits from the surrounding area.

B. Resort Trip Generation

The several development proposals define the future development of hotel, housing and condominium units that will generate additional traffic on the surrounding roadway network. The proposed development has been divided into two Stages for construction. Table 5: Proposed Development Units summarizes the number and type of units anticipated for the full build-out of each Stage.

Table 5: Proposed Development Units

	Stage 1 2019	Stage 2 2025
STAGE 1		
Hotel Rooms		
Summit Village	240	
Corporate Retreat	18	
Hostel	30	
Total	288	
Single Family Residence		
Summit Village	60	
Summit Village Nests	45	
Total	105	
Multi-Family		
Summit Village	25	
Total	25	
TOTAL Units Stage 1	**418**	
STAGE 2		
Hotel Rooms		
Summit Village		160
Corporate Retreats		72
Total		232
Single Family Residence		
The Ridge		30
The Ridge Nest (Rented)		36
Summit Village		100
Summit Village Nest		80
Gersten		15
Gersten Nests (Private)		10
Total		271
Multi-Family		
Summit Village		40
Gersten		20
Total		60
TOTAL Units Stage 2		**563**

Many of the land uses identified are not specifically identified in *Trip Generation Manual,* (9th ed.; Institute of Transportation Engineers [ITE], 2012) making it necessary to make adjustments to rates found in *Trip Generation Manual* and obtain estimates for others. Each land use is listed below with a short discussion of how the estimate for that use was obtained. Since Powder Mountain is principally a ski resort and the largest trip generators function in the winter, summer trip generators were not included in the trip estimate for peak hour trips.

- **Recreational Homes** – *Trip Generation Manual* identifies recreational homes (ITE Code 260) as "located in a resort containing local services and complete recreational facilities". The recreational homes trip generation rate was chosen over the typical single family detached housing trip generation rate because "a large number of internal trips were made for recreational purposes in resort communities containing recreational homes".
- **Resort Hotel** – *Trip Generation Manual* identifies resort hotels (ITE Code 330) as being "similar to hotels in that they provide sleeping accommodations, restaurants, cocktail lounges, retail shops and guest services. The primary difference is that resort hotels cater to the tourist and vacation industry, often providing a wide variety of recreational facilities/programs. Some properties contained in this land use provide guest transportation services (such as airport shuttles), which may have an impact on the overall trip generation rates."
- **Hostel** – *Trip Generation Manual* identifies hotels (ITE Code 310) as "places of lodging that provide sleeping accommodations".
- **Condominiums** – *Trip Generation Manual* identifies luxury condominiums (ITE Code 233) as "units in buildings with luxury facilities or services".
- **Snow Ski Area** - *Trip Generation Manual* identifies snow ski area (ITE Code 466) with a trip generation based on the number of lifts at the ski area for weekday and Saturday AM/PM peak hours. The *Trip Generation Manual* does not provide a trip generation rate for weekday or Saturday daily trips. The average ticket sales for three seasons (2010-2012) indicate an average daily trip generation rate per ski lift of 67 trips per weekday and 112 trips on Saturday. These generation rates for ski lifts are higher than those from ITE and were used in the trip generation of traffic for this traffic generator.

While ITE's *Trip Generation Manual* is the most definitive available source for estimating vehicle traffic that different land uses will generate, its information is most useful for auto-oriented, stand-alone suburban sites, from where the vast majority of data were collected. For areas with mixed uses, ITE advises traffic engineers to collect local data, or adjust the ITE average trip generation rate to account for reduced automobile use. The rates used are a combination of the ITE data and engineering judgment.

Internal Trips

The proposed development will provide an array of amenities attempting to provide for most of the guest's wants and needs while remaining on the premises, such as food, drink, lodging, sports, entertainment, recreational activities, and shopping. Providing nearly all of the services guest's might want within close proximity to the lodging, trips among the various land uses can be kept within the resort and these internal trips will not significantly impact the major street system.

The *Trip Generation Handbook* (2nd ed.; Institute of Transportation Engineers, 2004) describes internal trips as follows.

> An internal capture rate can generally be defined as a percentage reduction that can be applied to the trip generation estimates for individual land uses

to account for trips internal to the site. It is important to note that these reductions are applied externally to the site (i.e., at entrances, at adjacent intersections, and on adjacent roadways).

This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system.

Because data has been collected directly for recreational housing and resort hotels, they are considered in the *Trip Generation Manual* as a single land use, therefore the associated trip generation rates given reflect the recreational/resort nature of the development. Therefore, internal capture rates are not applicable for recreational homes and resort hotels.

The *Trip Generation Handbook* suggests an internal capture rate of 53 percent for the weekday p.m. peak hour from residential to retail development, 34 percent in the midday and 38 percent daily. Review of other resort transportation plans used either the same rates or similar rates for trip reduction. Combining the capture rates from ITE and from other studies internal capture rates of 38 percent for weekday, 45 percent for weekend, 30 percent for the weekday a.m. peak hour, 53 percent for the weekday p.m. peak hour, and 50 percent for the Saturday p.m. peak hour were used in estimating trip reduction.

Overnight Guest/Resident Trips

Overnight guests and residents represent those visitors to the resort that are staying within the properties of Powder Mountain for approximately one week. These overnight visitors would represent a significant number of skiers for the resort, so to determine these skier trip forecasts, the various residential land uses within the resort were broken down by dwelling units or rooms and private or rented. A dwelling unit is a measure of housing equivalent to the living quarters of one household. Rooms provide lodging paid on a short-term basis such as a hotel room.

Weekday and weekend occupancy rates, based on information from the *Snowbasin Resort Master Plan* (Felsburg Holt & Ullevig, 2010), were applied to each property type. Table 6: Residential Occupancy Rates shows the projected occupancy rates for weekday and weekend conditions.

Table 6: Residential Occupancy Rates

Land Use	Occupancy Rate	
	Weekday	Weekend
Recreational Homes (private) (dwelling units)	25 %	50 %
Resort Hotel (rooms)	50 %	90 %
Hostel (rooms)	50 %	90 %
Luxury Condominium (private) (dwelling units)	25 %	50 %
Luxury Condominium (rented) (dwelling units)	50 %	90 %

Local Day Skiers

The existing local day skiers are not included in this analysis as they have already been accounted for in the existing daily traffic volume counts. It is anticipated that the number of local day skiers at Powder Mountain will grow approximately one percent a year.

A vehicle occupancy rate of 2.7 skiers per vehicle was assumed for skier trip generation reduction. This occupancy rate comes from the *Final Environmental Impact Statement* for *Breckenridge Ski Resort Peak 6 Project* (USDA Forest Service, 2012) which is based on other studies.

Projected Employee Base

The projected employment base includes all new employees working at Powder Mountain Resort, either for the ski area or for one of the rental, hotel or commercial properties at the resort. The existing ski area employees are not included in this analysis as they have already been accounted for in the existing daily traffic volume counts. Table 7: Employee Forecasts shows the projected employment summary at full build-out of the resort for both stages of development.

Table 7: Employee Forecasts

	Employees			
	Stage 1		Stage 2	
Land Use	Weekday	Weekend	Weekday	Weekend
Ski Area Employees	68	96		
Hotel	230	288	186	232
Commercial	66	66		
Total Employees	364	450	186	232

Powder Mountain will provide transportation for all their employees to/from the ski resort by providing either a shuttle service or transit passes on UTA to reduce the number of trips to the resort by employees.

Utah Transit Authority (UTA) Ridership

January 2014 data from UTA shows average passengers by trip time going to Powder Mountain. There are an average of 12 skiers in the AM peak period and 32 skiers in the PM peak that take advantage of the UTA services to Powder Mountain. Powder Mountain Resort has committed to reducing the number of skier single vehicle trips by 50 percent by providing enticements to the skiers to use UTA transit services.

Total Trip Generation

Using the previously stated assumptions, vehicle trips were forecast for the proposed types of development for each Stage of the resort. Table 8: Estimated Trip Generation - Stage 1 and Table 9: Estimated Trip Generation - Stage 2 summarize the trip generation for both development Stages.

Table 8: Estimated Trip Generation - Stage 1

Land Use	ITE Code	Size	Daily Trips		Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
			Weekday	Sat.	Total	In	Out	Total	In	Out	Total	In	Out
Luxury Condominium (private) *Internal Trips*	233	25	19 *(7)*	37 *(17)*	4 *(2)*	2 *(1)*	2 *(1)*	4 *(2)*	2 *(1)*	2 *(1)*	5 *(3)*	3 *(2)*	2 *(1)*
Recreational Homes*	260	105	38	71	6	3	3	5	2	3	10	5	5
Resort Hotel*	330	258	495	1,338	28	18	10	34	17	17	124	60	64
Hostel *Internal Trips*	310	30	134 *(51)*	284 *(128)*	10 *(3)*	5 *(2)*	5 *(1)*	11 *(6)*	6 *(3)*	5 *(3)*	24 *(12)*	13 *(6)*	11 *(6)*
Snow Ski Area	466	6 lifts	55	91	21	20	1	28	1	27	72	3	69
Total Project Trips			683	1,676	64	45	19	74	24	50	220	76	144

*Recreation homes and resort hotels trip rates already include effects of internalization, so no internal reduction is shown.

Table 9: Estimated Trip Generation - Stage 2

Land Use	ITE Code	Size	Daily Trips		Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
			Weekday	Sat.	Total	In	Out	Total	In	Out	Total	In	Out
Luxury Condominium (private) *Internal Trips*	233	60	44 *(17)*	86 *(39)*	6 (2)	2 *(1)*	4 *(1)*	6 *(3)*	4 *(2)*	2 *(1)*	10 *(5)*	6 *(3)*	4 *(2)*
Recreational Homes*	260	271	94	180	10	5	5	11	5	6	11	6	5
Resort Hotel*	330	232	445	1,204	25	16	9	32	16	16	112	54	58
Snow Ski Area	466		9	15	3	3	0	4	0	4	11	0	11
Total Project Trips			575	1,446	42	25	17	50	23	27	139	63	76

*Recreation homes and resort hotels trip rates already include effects of internalization, so no internal reduction is shown.

C. Resort Vehicle-Trip Distribution and Assignment

Project traffic was assigned to the roadway network based on the proximity of project access points to major roads, population densities, and regional trip attractions. Existing travel patterns observed during site visits also provided helpful guidance to establishing these distribution percentage. SR-158 is the only major route into and out of the site vicinity. As such, all access to and from the project will be channeled through SR-158. The trip distribution prepared for this report is consistent with the distribution presented in the *Powder Mountain Ski Resort - Traffic Impact Study* (Fehr & Peers, 2005). The distribution percentages are as follows, and are illustrated in Figure 2: Trip Distribution.

- 10 % - to/from the west on North Ogden Canyon Road
- 60 % - to/from the west on Ogden Canyon Road (SR-39)
- 23 % - to/from the west on Interstate 84
- 5 % - to/from the east on Interstate 84
- 2 % - to/from the east on SR-39

Figure 2: Trip Distribution

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Study Intersections
State Route
Highway
X% Trip Distribution Percentage

0 2 4
Miles

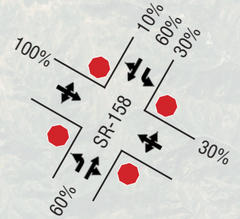
N

Liberty
Route 3460
Route 3464
North Ogden
Eden
Huntsville
Ogden
South Weber
Mountain Green
158
166
39
167
30
84
A
B
C
10%
60%
2%
23%
5%

A

SR-158/SR-162

Stop Sign
xx% Trip Distribution



B

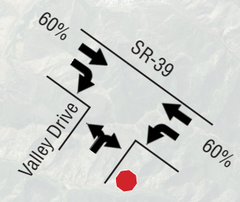
SR-39/SR-158

Stop Sign
xx% Trip Distribution

C

SR-39/Valley Drive

Stop Sign
xx% Trip Distribution



III. Traffic Impacts

A. Background Traffic Volume Projections

Background traffic volumes were derived from historical daily traffic volumes along SR-39 and SR-158. The growth factor was based on historical growth trends from 1998 to 2012 as shown in Table 10: Traffic Growth Rate. Based on the historical data, traffic on the roadways in the vicinity of the project has decreased or grown very little. To be conservative, traffic is anticipated to grow at a rate of 1.00 percent per year. This yearly growth is unrelated to the proposed project.

Table 10: Traffic Growth Rate

Road	Location	1998 AADT	2012 AADT	Annual Growth
SR-39	8.680 - Valley Dr.	7935	7340	-0.56 percent
	13.792 - SR-158	3845	3395	-0.89 percent
	16.563 – Snow Basin Rd.	2440	3165	1.88 percent
			SR-39 Average Growth	0.43 percent
SR-158	0.0 – Jct. SR-39	3935	6200	3.30 percent
	3.778 – Route 3464	3985	3405	-1.12 percent
	4.337 – Route 3460	2780	2865	0.21 percent
	8.181 - Powder Mountain	1605	2120	2.01 percent
			SR-158 Average Growth	0.28 percent
			Anticipated Growth Rate	1.00 percent

B. Future (2019) Traffic Operations

Figure 3: 2019 Baseline Traffic depicts the traffic volumes expected in 2019 at the three study intersections with one percent baseline traffic growth rate. Figure 4: 2019 Baseline + Stage 1 Traffic shows the anticipated traffic volumes when the trips generated by Stage 1 traffic are added to the baseline traffic. Table 11: Future (2019) Level of Service Summary – Stage 1 shows the LOS anticipated in 2019 with the baseline growth and the proposed development at full build-out of Stage 1. The northeastbound left turn movement at the SR-39/Valley Drive intersection will operate at LOS F during the Saturday PM peak hour in 2019 from the natural growth of the local traffic. The additional resort traffic appears to routinely decrease the LOS at all three study intersections during the Saturday PM peak period. SR-39/Valley Drive will continue to operate at LOS F and the LOS at SR-39/SR-158 for the southbound left turn movement decreases from LOS C to E during the Saturday PM peak period. The LOS at all-way stop SR-158/Route 3460 intersection decreases from LOS C to LOS D during the Saturday PM peak period. The additional resort traffic appears to routinely decrease the LOS at all three study intersections during the Saturday PM peak period.

Figure 3: 2019 Baseline Traffic

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Study Intersections
State Route
Highway
Stop Sign

XX AM Peak
(XX) PM Peak
[XX] Saturday PM Peak

N
0 1.25 2.5
Miles

Powder Mountain
158
Route 3460
Route 3464
A
Eden
158
Pineview Reservoir
B
39
39
166
39
Huntsville
C
167

A

SR-158/SR-162
Weekday: LOS B
Saturday: LOS C

36, (61), [58]
94, (68), [42]
76, (88), [146]
32, (65), [64]
71, (100), [180]
50, (44), [67]
SR-158
71, (147), [103]
71, (109), [111]
4, (5), [12]
34, (42), [57]
90, (69), [54]
4, (3), [12]

B

SR-39/SR-158
Weekday: LOS A
Saturday: LOS A

25, (14), [53]
184, (148), [273]
SR-158
12, (51), [43]
66, (105), [246]
105, (238), [188]
123, (96), [104]
SR-39

C

SR-39/Valley Drive
Weekday: LOS A
Saturday: LOS A

161, (217), [215]
19, (58), [135]
SR-39
Valley Drive
183, (276), [362]
171, (92), [156]
7, (47), [71]
63, (122), [96]

Figure 4: 2019 Baseline+Stage 1 Traffic

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Study Intersections
State Route
Highway
Stop Sign

XX AM Peak
(XX) PM Peak
[XX] Saturday PM Peak

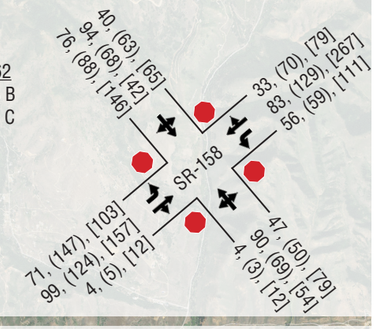
N

0 1.25 2.5
Miles

Powder Mountain
Eden
Pineview Reservoir
Huntsville
Route 3460
Route 3464
158
39
166
167

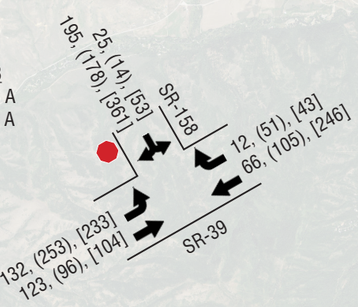
A

SR-158/SR-162
Weekday: LOS B
Saturday: LOS C



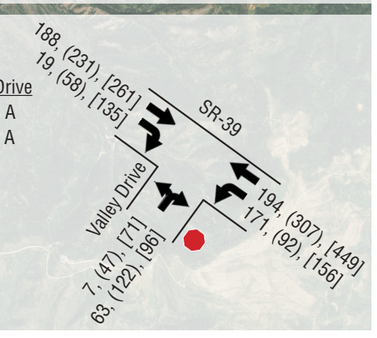
B

SR-39/SR-158
Weekday: LOS A
Saturday: LOS A



C

SR-39/Valley Drive
Weekday: LOS A
Saturday: LOS A



C. Future (2025) Traffic Operations

Figure 5: 2025 Baseline Traffic shows the traffic volumes anticipated in 2025 at the three study intersections with one percent baseline traffic growth rate. Figure 6: 2025 Baseline + Stage 2 Traffic illustrates the expected traffic volumes when the trips generated by Stage 2 traffic are added to the baseline traffic. Table 12: Future (2025) Level of Service Summary – Stage 2 shows the LOS anticipated in 2025 with the baseline growth and the proposed development at full build-out of Stage 2. The baseline growth of traffic will cause the northeast left/right movement at SR-39/Valley Drive to operate at LOS F during the Saturday PM peak hour and SR-39/SR-158 will operate at LOS D during the same time period.

When the trips generated by the resort from Stage 2 are added to the surrounding roadway network, the results show the northeastbound left turn movement at the SR-39/Valley Drive intersection continues to operate at LOS F during the Saturday PM peak hour. The LOS at SR-39/SR-158 for the southbound left turn movement decreases from LOS D to F during the Saturday PM peak period. The LOS at all-way stop SR-158/Route 3460 intersection decreases from LOS C to LOS E during the Saturday PM peak period. The additional resort traffic appears to routinely decrease the LOS at all three study intersections during the Saturday PM peak period.

Figure 5: 2025 Baseline Traffic

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Study Intersections
State Route
Highway
Stop Sign

XX AM Peak
(XX) PM Peak
[XX] Saturday PM Peak

N

0 1.25 2.5
Miles

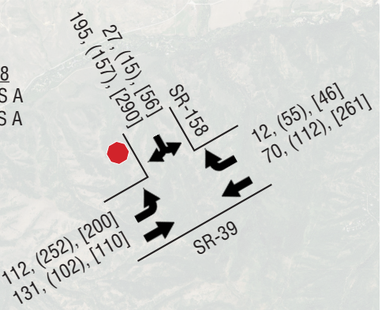
Powder Mountain
Eden
Pineview Reservoir
Huntsville
Route 3460
Route 3464
158
39
166
167
A
B
C

A

SR-158/SR-162
Weekday: LOS B
Saturday: LOS C

B

SR-39/SR-158
Weekday: LOS A
Saturday: LOS A



C

SR-39/Valley Drive
Weekday: LOS A
Saturday: LOS A

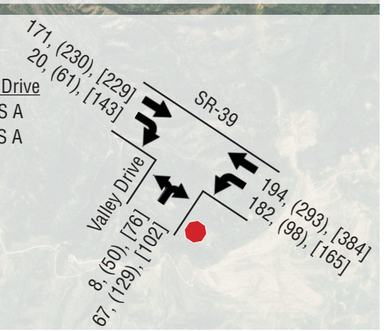


Figure 6: 2025 Baseline Stage 2 Traffic

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Study Intersections
State Route
Highway
Stop Sign

XX AM Peak
(XX) PM Peak
[XX] Saturday PM Peak

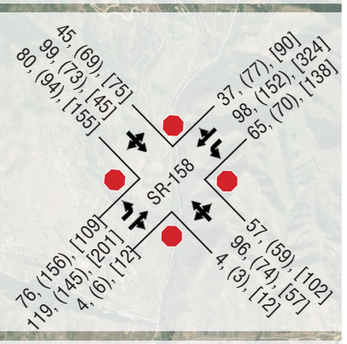
N

0 1.25 2.5
Miles

Powder Mountain
158
Route 3460
Route 3464
A
Eden
158
Pineview Reservoir
B
39
39
166
39
Huntsville
C
167

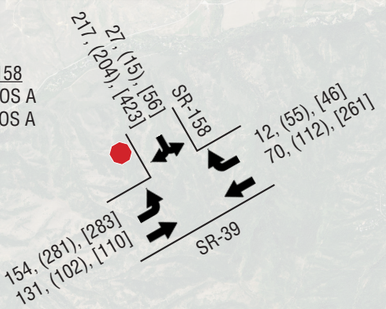
A

SR-158/SR-162
Weekday: LOS B
Saturday: LOS C



B

SR-39/SR-158
Weekday: LOS A
Saturday: LOS A



C

SR-39/Valley Drive
Weekday: LOS A
Saturday: LOS A

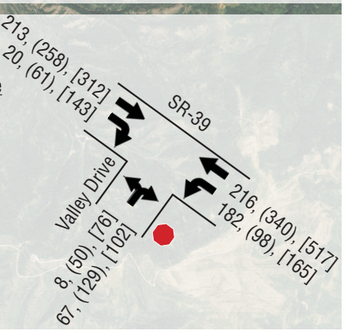


Table 11: Future (2019) Level of Service Summary - Stage 1

		2019 Baseline			With Project		
Intersection		Minor Street		Intersection	Minor Street		Intersection
Description/Control	Peak Period	LOS/ Control Delay (s)	Movement	Delay (s/veh)	LOS/ Control Delay (s)	Movement	Delay (s/veh)
SR-39/Valley Drive NE/Stop	Weekday AM	B/11.7	NEBLR	3.7	C/21.6	NEBLR	3.6
	Weekday PM	C/15.8	NEBLR	4.2	C/21.5	NEBLR	3.6
	Saturday PM	F/58.9	NEBLR	11.7	F/103.2	NEBLR	10.1
SR-39/SR-158 S/Stop	Weekday AM	B/10.7	SBLR	5.9	B/10.9	SBLR	6.2
	Weekday PM	B/11.1	SBLR	5.5	B/11.3	SBLR	5.9
	Saturday PM	C/22.7	SBLR	9.7	E/37.5	SBLR	16.8
				LOS/Delay (s/veh)			LOS/Delay (s/veh)
SR-158/Route 3460 All-Way Stop	Weekday AM	na	na	B/11.0	na	na	B/11.7
	Weekday PM	na	na	C/15.6	na	na	C/17.9
	Saturday PM	na	na	C/17.7	na	na	D/35.0

NEBLR = Northeastbound shared Left/Right Lane; SBLR = Southbound shared Left/Right Lane; s = seconds; s/veh = seconds/vehicle

Table 12: Future (2025) Level of Service Summary – Stage 2

		2025 Baseline			With Project		
Intersection		Minor Street		Intersection	Minor Street		Intersection
Description/Control	Peak Period	LOS/ Control Delay (s)	Movement	Delay (s/veh)	LOS/ Control Delay (s)	Movement	Delay (s/veh)
SR-39/Valley Drive NE/Stop	Weekday AM	B/12.3	NEBLR	3.8	B/13.1	NEBLR	3.7
	Weekday PM	C/17.2	NEBLR	4.5	C/19.2	NEBLR	4.5
	Saturday PM	F/94.1	NEBLR	18.1	F/271.1	NEBLR	42.0
SR-39/SR-158 S/Stop	Weekday AM	B/10.9	SBLR	6.0	B/11.4	SBLR	6.5
	Weekday PM	B/11.4	SBLR	5.6	B/12.0	SBLR	6.2
	Saturday PM	D/27.5	SBLR	11.5	F/85.2	SBLR	36.9
				LOS/Delay (s/veh)			LOS/Delay (s/veh
SR-158/Route 3460 All-Way Stop	Weekday AM	na	na	B/11.5	na	na	B/13.0
	Weekday PM	na	na	B/14.4	na	na	C/24.5
	Saturday PM	na	na	C/20.5	na	na	E/40.4

NEBLR = Northeastbound shared Left/Right Lane; SBLR = Southbound shared Left/Right Lane; s = seconds; s/veh = seconds/vehicle

E. Highway Operations

Two-lane highway capacity analyses were performed for the following key sections of SR-39 and SR-158:

- SR-158 to Powder Mountain, uphill and downhill
- SR-158 to Eden, uphill and downhill
- SR-39 to Junction SR-158, uphill and downhill

Highway capacity analyses were performed using the two lane highway methodology found in the HCM. The uphill segments were evaluated during the morning peak and the downhill segments were evaluated during the evening peak for traffic volumes in 2014 (existing), 2019 and 2025. The intent is to capture the highway LOS for each direction during a peak ski Saturday. The results are summarized in Table 13: Two-Lane Highway LOS.

Table 13: Two-Lane Highway Level of Service

Segment	2014 (Existing)		2019		2025	
	Uphill AM	Downhill PM	Uphill AM	Downhill PM	Uphill AM	Downhill PM
SR-158 to Powder Mountain	LOS B		LOS B		LOS B	
SR-158 to Powder Mountain		LOS C		LOS C		LOS C
SR-158 to Eden	LOS A		LOS B		LOS B	
SR-158 to Eden		LOS B		LOS B		LOS C
SR-39 to Jct. SR-158	LOS C		LOS C		LOS C	
SR-39 to Jct. SR-158		LOS C		LOS C		LOS C

F. Intersection Queue Length

The single lane approaches at T-intersections SR-39/Valley Drive and SR-39/SR-158 provide sufficient storage in the travel lane under stop conditions. At SR-158/Route 3460, the northeast left turn pocket provides 150 feet of storage and the southwest left turn pocket provides 100 feet of storage and there is sufficient storage length provided in the through lane of each approach. Table 14: Intersection Queue Lengths summarizes the projected 95th percentile queuing lengths at each intersection for the baseline scenario without the project and full build-out at the end of each Stage.

At SR-158/Route 3460, the northeast left turn pocket length provides sufficient storage for the projected left turn traffic during both stages of development. However, the queue length of the adjacent through lane will extend past the left turn pocket opening with the addition of project traffic in 2025 during the Saturday PM peak period. The queue length of the SW through lane will extend past the left turn pocket opening with the addition of the project traffic in 2025 during the weekday PM peak and during Saturday PM peak periods beginning in 2019.

Table 14: Intersection Queue Lengths (ft)

SR-39/VALLEY			
	NE Left/Right		
	WD AM	WD PM	Sat. PM
2014	8	15	14
2019 wo/p	13	43	181
2019 w/p	9	20	142
2025 wo/p	16	51	247
2025 w/p	17	58	407

SR-39/SR-158			
	S Left/Right		
	WD AM	WD PM	Sat. PM
2014	27	22	104
2019 wo/p	29	24	125
2019 w/p	32	30	235
2025 wo/p	32	27	158
2025 w/p	38	37	427

SR-158/Route 3460																		
	NE Left			NE Through			NW Through			SE Trough			SW Left			SW Through		
	WD AM	WD PM	Sat. PM	WD AM	WD PM	Sat. PM	WD AM	WD PM	Sat. PM	WD AM	WD PM	Sat. PM	WD AM	WD PM	Sat. PM	WD AM	WD PM	Sat. PM
2014	13	43	23	15	28	33	25	30	30	43	93	78	13	8	23	25	58	123
2019 wo/p	13	48	23	15	30	35	28	35	33	48	108	85	15	10	23	28	65	135
2019 w/p	13	50	28	25	38	68	33	40	53	55	125	118	18	13	53	33	100	343
2025 wo/p	15	20	28	18	35	40	33	50	40	55	95	108	18	15	28	30	45	183
2025 w/p	15	65	33	33	55	118	43	55	75	65	185	165	23	18	90	45	158	328

KEY: Queue lengths in feet; wo/p = without project; w/p = with project; WD = weekday; Sat. = Saturday; NE = northeast; S = south; NE = northeast; NW = northwest; SE = southeast; SW = southwest; SW = southwest

G. Recommended Mitigation

All three intersections exceed the LOS C or better criteria and will require mitigation to improve the intersection LOS to bring the intersection operations back into compliance with LOS C or better. Table 15: Future Level of Service Summary with Recommended Mitigation shows the expected LOS with the addition of traffic signals or roundabouts.

SR-39/Valley Drive Currently the intersection operates at LOS D on Saturdays and decreases to LOS F by 2019 without the addition of project traffic and will continue to operate at LOS F in the coming years as traffic growth increases. The mitigation measure of widening Valley Drive to provide a separate left-turn lane and a separate right-turn lane only reduces the seconds of control delay, but still operates at LOS F. The other option to improve the LOS is the installation of a traffic signal. PEC conducted a signal warrant analysis and found that a signal is not warranted at this location through 2025. PEC recommends improving the intersection by installing a raised median on SR-39 that would allow the Valley Drive left-turns to turn into the channelized median and then merge into the westbound traffic on SR-39.

SR-39/SR-158 On Saturday during the PM peak period, the LOS drops to LOS E in 2019 when project trips are added and slips to LOS F in 2025 with project traffic. PEC recommends adding a traffic signal at the intersection to improve the intersection operation to LOS A during the Saturday PM peak hour. PEC conducted a traffic signal warrant analysis and found that signal warrants 2 and 3 are met for this intersection today in 2014 using Saturday traffic volumes without any additional project generated traffic. This is due to the higher speeds on SR-39 at the intersection. Warrants for the signal meet the criteria for Saturday PM peak hour traffic only, not the weekdays. The traffic signal could be installed at the intersection without any geometric improvements and still achieve LOS A without impacting the dam.

SR-158/Route 3460 The growth in traffic with the addition of project traffic causes the Saturday PM peak hour LOS to decrease to LOS D in 2019 and LOS E in 2025 if no changes to the intersection traffic control are made. PEC recommends adding a traffic signal or roundabout at the intersection to return the intersection operation to LOS C or better during the Saturday PM peak hour in 2019 and 2025. PEC conducted a traffic signal warrant analysis and found that weekday traffic does not warrant a traffic signal but Saturday traffic with additional project traffic meets the criteria for signal warrant 3 in 2019.

Table 15: Future Level of Service Summary with Recommended Mitigation

Intersection *Traffic Control*	Peak Period	2019		2025	
		Baseline	With Project	Baseline	With Project
		LOS/Control Delay (s/veh)	LOS/Control Delay (s/veh)	LOS/Control Delay (s/veh)	LOS/Control Delay (s/veh)
SR-39/Valley Drive *Traffic Signal*	Saturday PM	A/8.1	A/6.9	A/6.8	A/7.6
SR-39/SR-158 *Traffic Signal*	Saturday PM	A/6.9	A/7.2	A/7.3	A/8.4
SR-158/Route 3460 *Traffic Signal* *Roundabout*	Saturday PM	A/9.9 A/9.1	B/10.2 B/11.6	A/8.6 A/9.0	B/12.8 C/16.0

s/veh = seconds/vehicle

IV. Parking

A. Current Parking Utilization

Parking utilization data for Powder Mountain Resort parking lots was collected between January 15, 2014 and February 5, 2014. A summary of existing parking conditions is listed below in Table 15: Parking Lot Summary.

Table 16: Parking Lot Summary

Parking Lots	Available Stalls	Weekday Utilization (%)	Saturday Utilization (%)
Rainbow Gardens Park-n-Ride Lot	69[1]	41	70
Eden Valley Market Park-n-Ride Lot	65[2]	19	29
Powder Mountain Tiger Lot	50[2]	14	81
Powder Mountain Sundown Lot	90[2]	24	70
Powder Mountain Resort Center Lot	460[2]	14	77

[1] Actual number of parking stalls. [2] Approximate number of parking stalls.

This utilization data indicates that during the weekdays skiers are 2.2 times more likely to ride UTA transit from the Rainbow Gardens park-n-ride lot rather than the Eden Valley Market park-n-ride lot and 2.5 times more likely on Saturdays.

Figure 3: Existing Parking details the weekday and Saturday utilization of the three resort parking lots and two park-n-ride lots associated with Powder Mountain Resort.

The Rainbow Gardens park-n-ride lot located on the west side of Rainbow Gardens Market on Valley Drive, is approximately 400 feet southwest of the junction with SR-39 at the mouth of Ogden Canyon. This parking lot is paved and operated by Rainbow Gardens in association with UTA.

The Eden Valley park-n-ride lot located approximately 600 feet northwest of Eden Valley Market on Route 3460 is unpaved and is serviced by UTA, but is not owned or operated by UTA.

The three parking lots owned and operated by Powder Mountain Resort are unpaved.

B. Future Parking Demands

Efforts to entice skiers and Powder Mountain employees to use UTA transit will create a need for additional park-n-ride lots to accommodate the increased ridership. Ninety-six seasonal employees will have the opportunity to stay in workforce housing at the ski resort while the others will commute daily to housing in other areas. Approximately 950 employees and skiers will use UTA services on the weekend. To accommodate this parking demand 1000 additional parking stalls will be provided. There are approximately 8.5 acres adjacent to the existing Rainbow Gardens that appears to be suitable for a parking lot and appears to be large enough to accommodate the number of required parking stalls. Figure 8: Potential Park-n-Ride Location shows the proposed location for future parking needs.

The north parking lot (311 stalls) at the UTA Ogden Transit Center located at 2350 S. Wall Avenue in Ogden could be used for overflow parking in the event the proposed park-n-ride lots become full. This lot should be available on weekends when weekday commuters are not using the parking spaces. An agreement with UTA will be negotiated to facilitate the use of these UTA facilities.

Figure 7: Existing Parking

2011 NAIP 1-meter Aerial Photography
Powder Mountain Traffic Study

Parking Lots Vicinity
State Route
Highway

0 1.25 2.5
Miles

N

Powder Mountain
Route 3460
Route 3464
Eden
158
Pineview Reservoir
39
166
Huntsville
167

A Powder Mountain Resort Center Lot
Available Stalls: 460
Weekday Utilization: 14%
Saturday Utilization: 77%

B Powder Mountain Sundown Lot
Available Stalls: 88
Weekday Utilization: 24%
Saturday Utilization: 70%

C Powder Mountain Tiger Lot
Available Stalls: 52
Weekday Utilization: 14%
Saturday Utilization: 81%

D Eden Valley Market Park-n-Ride Lot
Available Stalls: 64
Weekday Utilization: 19%
Saturday Utilization: 29%

E Rainbow Gardens Park-n-Ride Lot
Available Stalls: 69
Weekday Utilization: 41%
Saturday Utilization: 70%

Figure 8: Potential Park and Ride Location

2012 HRO 6-inch Orthophotography

Powder Mountain Traffic Study

Potential Park and Ride
8.5 acres
1000 Parking Stalls

0 150 300
Feet

N

V. Travel Demand Management

Travel demand management (TDM) measures represent actions taken by a development to limit vehicle trips made to and from the site. Typically these measures encourage site users to select a travel mode other than a single occupancy vehicle to get to and from the property, such as carpooling or transit.

Powder Mountain will provide an internal shuttle system so that overnight guests have means to access the ski area base without using their vehicles. The shuttle is anticipated to reduce vehicle travel within and between those areas by approximately 206 trips per day on the weekdays and 392 trips on the weekends. Powder Mountain has teamed up with UTA to provide transit service from Ogden or Eden so guests and employees don't have to rely on their personal vehicle to travel to the resort.

VI. Sustainability

Transportation sustainability is accomplished by limiting the traffic demand on the roadway system; fewer vehicles equals less congestion and less environmental impacts. Powder Mountain will strive to achieve that by providing on-mountain accommodations that allow residents and guests to drive to the resort once and stay for multiple days instead of making trips back and forth from the resort to surrounding cities (i.e., Ogden, Eden, etc.) every day. Additionally, Powder Mountain will provide supportive commercial and retail facilities within the resort that allow guests to fulfill many of their trip purposes (such as dining, entertainment and resort-related shopping) on site, limiting the number of trips to Eden or Ogden for those needs. Powder Mountain will also provide an internal shuttle system between the resort development areas that will enable guests to access the ski areas without using their own vehicle. This system could either operate as either an on-call system, a fixed route, fixed schedule system or hybrid system that offers fixed route service during the peak demand periods and on-call service during lower demand periods.

Other ways the resort will reduce travel demand and promote sustainability include:

- Provide preferred parking in the day skier lots for vehicles with three or more occupants. To promote reduced vehicle emissions and a healthier environment, preferred parking could also be extended to hybrid vehicles and other low-emissions vehicles.
- Consolidate services that are needed at the resort from any non-resort business, whether it be related to laundry, custodial, utility, or security.
- Implement the use of alternative fuel shuttles for the employee/skier transit services.
- Provide transit passes to all employees and require the employees to use them except for those employees not using on-site housing to use transit
- Provide bicycles for use by resort employees and guests in the summer months.
- Provide information on shuttles, transit and other alternate modes to visitors.
- Have zipcars available for guests to use. Zipcar is a US membership-based carsharing company providing automobile reservations to its members, billable by the hour or day.

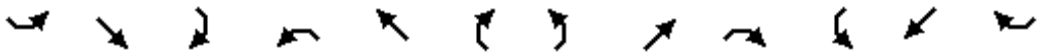
Appendix A – HCM Analyses

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Approach	SE	NW	NE	SW
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	333	198	347	754
Demand Flow Rate, veh/h	340	202	353	770
Vehicles Circulating, veh/h	660	424	348	218
Vehicles Exiting, veh/h	327	277	652	408
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	17.6	8.2	7.3	11.7
Approach LOS	C	A	A	B

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	L	TR	L	TR
Assumed Moves	LTR	LTR	L	TR	L	TR
RT Channelized						
Lane Util	1.000	1.000	0.337	0.663	0.262	0.738
Critical Headway, s	5.193	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	340	202	119	234	202	568
Cap Entry Lane, veh/h	584	739	798	798	909	909
Entry HV Adj Factor	0.979	0.982	0.983	0.982	0.980	0.980
Flow Entry, veh/h	333	198	117	230	198	556
Cap Entry, veh/h	572	726	784	783	891	890
V/C Ratio	0.582	0.273	0.149	0.293	0.222	0.625
Control Delay, s/veh	17.6	8.2	6.1	8.0	6.3	13.7
LOS	C	A	A	A	A	B
95th %tile Queue, veh	4	1	1	1	1	5

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	65	42	146	12	54	79	103	157	12	111	267	79
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	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	30		30	30		30	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt		0.923			0.931			0.988			0.966	
Flt Protected		0.987			0.995		0.950			0.950		
Satd. Flow (prot)	0	1697	0	0	1726	0	1770	1840	0	1770	1799	0
Flt Permitted		0.880			0.955		0.334			0.615		
Satd. Flow (perm)	0	1513	0	0	1656	0	622	1840	0	1146	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		171			101			12			42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1952			2006			1716			1747	
Travel Time (s)		44.4			45.6			39.0			39.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	87	56	190	18	79	101	117	212	18	198	431	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	333	0	0	198	0	117	230	0	198	556	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

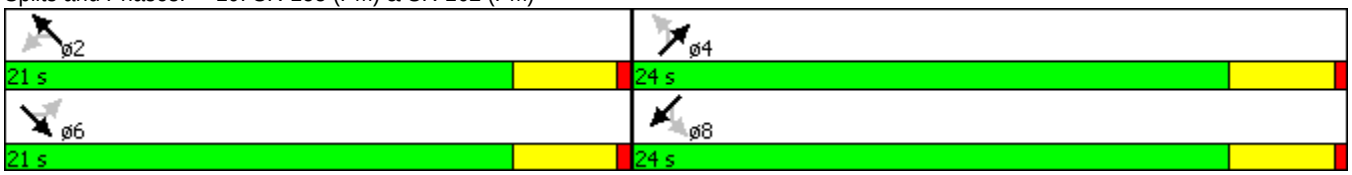


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	21.0	21.0		21.0	21.0		24.0	24.0		24.0	24.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	17.0	17.0		17.0	17.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
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)		9.9			9.9		14.9	14.9		14.9	14.9	
Actuated g/C Ratio		0.30			0.30		0.45	0.45		0.45	0.45	
v/c Ratio		0.58			0.35		0.42	0.28		0.39	0.67	
Control Delay		10.1			7.4		13.0	7.2		9.6	12.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.1			7.4		13.0	7.2		9.6	12.2	
LOS		B			A		B	A		A	B	
Approach Delay		10.1			7.4			9.1			11.5	
Approach LOS		B			A			A			B	
90th %ile Green (s)	17.0	17.0		17.0	17.0		20.0	20.0		20.0	20.0	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	12.5	12.5		12.5	12.5		20.0	20.0		20.0	20.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	9.5	9.5		9.5	9.5		15.8	15.8		15.8	15.8	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	7.0	7.0		7.0	7.0		11.8	11.8		11.8	11.8	
30th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	5.5	5.5		5.5	5.5		8.1	8.1		8.1	8.1	
10th %ile Term Code	Gap	Gap		Gap	Gap		Hold	Hold		Gap	Gap	
Stops (vph)		104			55		70	85		66	220	
Fuel Used(gal)		5			3		2	3		2	7	
CO Emissions (g/hr)		347			194		142	208		146	475	
NOx Emissions (g/hr)		68			38		28	40		28	92	
VOC Emissions (g/hr)		80			45		33	48		34	110	
Dilemma Vehicles (#)		0			0		0	0		0	0	
Queue Length 50th (ft)		22			13		12	20		19	58	
Queue Length 95th (ft)		53			30		53	52		37	97	
Internal Link Dist (ft)		1872			1926			1636			1667	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		903			949		399	1185		736	1170	
Starvation Cap Reductn		0			0		0	0		0	0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.37			0.21		0.29	0.19		0.27	0.48	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 33.4			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 45			
70th %ile Actuated Cycle: 40.5			
50th %ile Actuated Cycle: 33.3			
30th %ile Actuated Cycle: 26.8			
10th %ile Actuated Cycle: 21.6			

Splits and Phases: 19: SR-158 (PM) & SR-162 (PM)



Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	40	94	76	4	90	47	71	99	4	56	83	33
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	125	99	6	132	60	81	134	6	100	134	52
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.8	11.4	11.1	11.4
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	19%	100%	0%
Vol Thru, %	0%	96%	64%	45%	0%	72%
Vol Right, %	0%	4%	33%	36%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	103	141	210	56	116
LT Vol	0	99	90	94	0	83
Through Vol	0	4	47	76	0	33
RT Vol	71	0	4	40	56	0
Lane Flow Rate	81	140	199	277	100	186
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.154	0.247	0.314	0.429	0.189	0.314
Departure Headway (Hd)	6.884	6.347	5.695	5.562	6.786	6.074
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	520	564	628	643	527	590
Service Time	4.65	4.113	3.763	3.623	4.548	3.836
HCM Lane V/C Ratio	0.156	0.248	0.317	0.431	0.19	0.315
HCM Control Delay	10.9	11.2	11.4	12.8	11.1	11.6
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.5	1	1.3	2.2	0.7	1.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	35
Intersection LOS	D

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	65	42	146	12	54	79	103	157	12	111	267	79
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	56	190	18	79	101	117	212	18	198	431	125
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	22.9	16.1	16.7	53.7
HCM LOS	C	C	C	F

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	8%	26%	100%	0%
Vol Thru, %	0%	93%	37%	17%	0%	77%
Vol Right, %	0%	7%	54%	58%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	169	145	253	111	346
LT Vol	0	157	54	42	0	267
Through Vol	0	12	79	146	0	79
RT Vol	103	0	12	65	111	0
Lane Flow Rate	117	231	199	332	198	556
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.271	0.498	0.421	0.658	0.433	1
Departure Headway (Hd)	8.331	7.78	7.612	7.134	7.873	7.193
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	464	473	508	458	506
Service Time	6.071	5.519	5.65	5.167	5.622	4.942
HCM Lane V/C Ratio	0.271	0.498	0.421	0.654	0.432	1.099
HCM Control Delay	14.2	18	16.1	22.9	16.5	67
HCM Lane LOS	B	C	C	C	C	F
HCM 95th-tile Q	1.1	2.7	2.1	4.7	2.1	13.7

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	17.9
Intersection LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	63	68	88	3	69	50	147	124	5	59	129	70
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	162	91	117	4	110	71	193	165	7	72	184	127
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	22.1	14.1	15.1	18.4
HCM LOS	C	B	C	C

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	2%	29%	100%	0%
Vol Thru, %	0%	96%	57%	31%	0%	65%
Vol Right, %	0%	4%	41%	40%	0%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	129	122	219	59	199
LT Vol	0	124	69	68	0	129
Through Vol	0	5	50	88	0	70
RT Vol	147	0	3	63	59	0
Lane Flow Rate	193	173	185	370	72	312
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.418	0.347	0.361	0.672	0.155	0.604
Departure Headway (Hd)	7.78	7.237	7.026	6.542	7.743	6.976
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	495	508	551	462	514
Service Time	5.559	5.016	5.112	4.607	5.516	4.748
HCM Lane V/C Ratio	0.42	0.349	0.364	0.672	0.156	0.607
HCM Control Delay	16.1	13.9	14.1	22.1	11.9	19.9
HCM Lane LOS	C	B	B	C	B	C
HCM 95th-tile Q	2	1.5	1.6	5	0.5	4

Notes

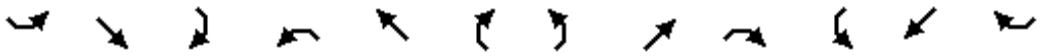
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	SE	NW	NE	SW
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	400	183	301	455
Demand Flow Rate, veh/h	408	187	307	464
Vehicles Circulating, veh/h	362	442	293	243
Vehicles Exiting, veh/h	345	158	477	386
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.2	8.1	6.3	8.6
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	L	TR	L	TR
Assumed Moves	LTR	LTR	L	TR	L	TR
RT Channelized						
Lane Util	1.000	1.000	0.453	0.547	0.181	0.819
Critical Headway, s	5.193	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	408	187	139	168	84	380
Cap Entry Lane, veh/h	787	726	843	843	886	886
Entry HV Adj Factor	0.980	0.980	0.978	0.982	0.976	0.981
Flow Entry, veh/h	400	183	136	165	82	373
Cap Entry, veh/h	771	712	825	828	865	870
V/C Ratio	0.519	0.257	0.165	0.199	0.095	0.429
Control Delay, s/veh	12.2	8.1	6.0	6.4	5.1	9.4
LOS	B	A	A	A	A	A
95th %tile Queue, veh	3	1	1	1	0	2

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	58	42	146	12	54	57	103	111	12	67	180	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.934			0.940			0.985			0.953	
Flt Protected		0.982			0.996		0.950			0.950		
Satd. Flow (prot)	0	1708	0	0	1744	0	1770	1835	0	1770	1775	0
Flt Permitted		0.809			0.953		0.471			0.653		
Satd. Flow (perm)	0	1408	0	0	1669	0	877	1835	0	1216	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		143			81			17			68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1804			1966			1622			2048	
Travel Time (s)		41.0			44.7			36.9			46.5	
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Adj. Flow (vph)	149	56	195	16	86	81	136	148	17	82	257	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	400	0	0	183	0	136	165	0	82	373	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	

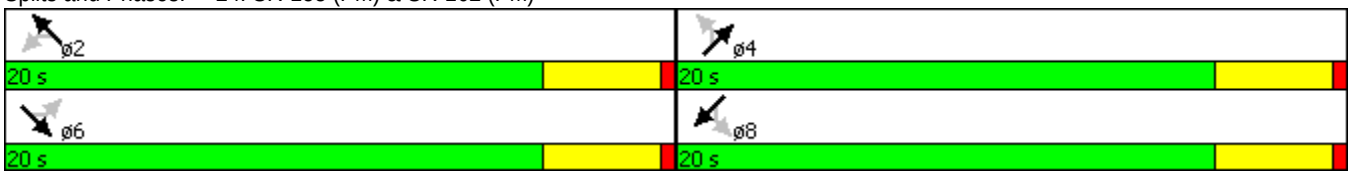


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
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)		12.6			12.6		10.9	10.9		10.9	10.9	
Actuated g/C Ratio		0.40			0.40		0.34	0.34		0.34	0.34	
v/c Ratio		0.62			0.26		0.45	0.26		0.20	0.57	
Control Delay		10.5			5.7		14.0	8.1		8.9	11.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		10.5			5.7		14.0	8.1		8.9	11.0	
LOS		B			A		B	A		A	B	
Approach Delay		10.5			5.7			10.7			10.6	
Approach LOS		B			A			B			B	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	16.0	16.0		16.0	16.0		14.6	14.6		14.6	14.6	
70th %ile Term Code	Max	Max		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	10.9	10.9		10.9	10.9		10.4	10.4		10.4	10.4	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	8.2	8.2		8.2	8.2		8.2	8.2		8.2	8.2	
30th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	12.1	12.1		12.1	12.1		6.4	6.4		6.4	6.4	
10th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Hold	Hold		Gap	Gap	
Stops (vph)		123			45		73	67		42	140	
Fuel Used(gal)		5			2		2	2		1	5	
CO Emissions (g/hr)		326			159		140	149		100	365	
NOx Emissions (g/hr)		63			31		27	29		19	71	
VOC Emissions (g/hr)		76			37		32	34		23	84	
Dilemma Vehicles (#)		0			0		0	0		0	0	
Queue Length 50th (ft)		27			9		14	14		8	33	
Queue Length 95th (ft)		69			23		42	37		27	66	
Internal Link Dist (ft)		1724			1886			1542			1968	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		805			913		459	969		637	962	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.50			0.20		0.30	0.17		0.13	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 31.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 40			
70th %ile Actuated Cycle: 38.6			
50th %ile Actuated Cycle: 29.3			
30th %ile Actuated Cycle: 24.4			
10th %ile Actuated Cycle: 26.5			

Splits and Phases: 24: SR-158 (PM) & SR-162 (PM)



Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	36	94	76	4	90	34	71	71	4	50	71	32
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	125	99	6	132	44	81	96	6	89	115	51
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	11.9	10.6	10.4	10.7
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	17%	100%	0%
Vol Thru, %	0%	95%	70%	46%	0%	69%
Vol Right, %	0%	5%	27%	37%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	75	128	206	50	103
LT Vol	0	71	90	94	0	71
Through Vol	0	4	34	76	0	32
RT Vol	71	0	4	36	50	0
Lane Flow Rate	81	102	182	272	89	165
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.15	0.175	0.277	0.4	0.164	0.269
Departure Headway (Hd)	6.7	6.154	5.478	5.295	6.597	5.867
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	582	653	677	544	612
Service Time	4.447	3.9	3.527	3.338	4.34	3.611
HCM Lane V/C Ratio	0.151	0.175	0.279	0.402	0.164	0.27
HCM Control Delay	10.6	10.2	10.6	11.9	10.6	10.8
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.5	0.6	1.1	1.9	0.6	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	20.6
Intersection LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	58	42	146	12	54	57	103	111	12	67	180	64
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	149	56	195	16	86	81	136	148	17	82	257	116
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	24.5	14.3	14.2	23.9
HCM LOS	C	B	B	C

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	10%	24%	100%	0%
Vol Thru, %	0%	90%	44%	17%	0%	74%
Vol Right, %	0%	10%	46%	59%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	123	123	246	67	244
LT Vol	0	111	54	42	0	180
Through Vol	0	12	57	146	0	64
RT Vol	103	0	12	58	67	0
Lane Flow Rate	136	165	183	399	82	374
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.303	0.342	0.363	0.718	0.175	0.728
Departure Headway (Hd)	8.039	7.453	7.152	6.474	7.717	7.014
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	445	480	499	555	463	512
Service Time	5.83	5.243	5.249	4.546	5.496	4.792
HCM Lane V/C Ratio	0.306	0.344	0.367	0.719	0.177	0.73
HCM Control Delay	14.3	14.1	14.3	24.5	12.1	26.5
HCM Lane LOS	B	B	B	C	B	D
HCM 95th-tile Q	1.3	1.5	1.6	5.9	0.6	6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

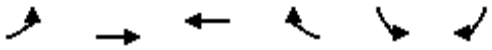
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	61	68	88	3	69	42	147	109	5	44	100	65
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	156	91	117	4	110	60	193	145	7	54	143	118
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	19	12.8	14	14.9
HCM LOS	C	B	B	B

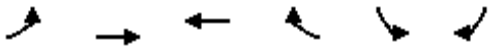
Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	28%	100%	0%
Vol Thru, %	0%	96%	61%	31%	0%	61%
Vol Right, %	0%	4%	37%	41%	0%	39%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	114	114	217	44	165
LT Vol	0	109	69	68	0	100
Through Vol	0	5	42	88	0	65
RT Vol	147	0	3	61	44	0
Lane Flow Rate	193	153	173	364	54	261
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.4	0.292	0.32	0.625	0.112	0.487
Departure Headway (Hd)	7.444	6.9	6.635	6.174	7.51	6.714
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	520	541	583	476	535
Service Time	5.199	4.654	4.692	4.219	5.264	4.467
HCM Lane V/C Ratio	0.399	0.294	0.32	0.624	0.113	0.488
HCM Control Delay	15.1	12.5	12.8	19	11.2	15.7
HCM Lane LOS	C	B	B	C	B	C
HCM 95th-tile Q	1.9	1.2	1.4	4.3	0.4	2.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	233	104	246	43	53	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	165			52	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.882	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1770	1863	1863	1583	1633	0
Flt Permitted	0.567				0.994	
Satd. Flow (perm)	1056	1863	1863	1583	1633	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62	435	
Link Speed (mph)		55	55		15	
Link Distance (ft)		930	953		841	
Travel Time (s)		11.5	11.8		38.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.89	0.79	0.69	0.86	0.83
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	251	117	311	62	62	435
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	117	311	62	497	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (ft)	20	100	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Detector Phase	4	4	8	8	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	

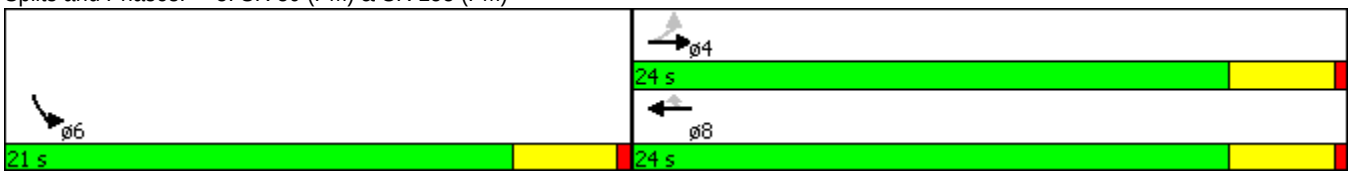


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	24.0	24.0	24.0	24.0	21.0	
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	
Maximum Green (s)	20.0	20.0	20.0	20.0	17.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	Min	
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)	12.3	12.3	12.3	12.3	12.8	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.44	
v/c Ratio	0.56	0.15	0.40	0.09	0.52	
Control Delay	13.0	6.5	8.2	2.8	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.0	6.5	8.2	2.8	4.4	
LOS	B	A	A	A	A	
Approach Delay		10.9	7.3		4.4	
Approach LOS		B	A		A	
90th %ile Green (s)	20.0	20.0	20.0	20.0	17.0	
90th %ile Term Code	Max	Max	Hold	Hold	Max	
70th %ile Green (s)	15.5	15.5	15.5	15.5	10.2	
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
50th %ile Green (s)	11.4	11.4	11.4	11.4	6.8	
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
30th %ile Green (s)	8.9	8.9	8.9	8.9	5.5	
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
10th %ile Green (s)	0.0	0.0	0.0	0.0	14.6	
10th %ile Term Code	Skip	Skip	Skip	Skip	Dwell	
Stops (vph)	150	52	135	9	76	
Fuel Used(gal)	5	2	4	0	4	
CO Emissions (g/hr)	334	120	308	32	286	
NOx Emissions (g/hr)	65	23	60	6	56	
VOC Emissions (g/hr)	77	28	71	7	66	
Dilemma Vehicles (#)	0	14	34	0	0	
Queue Length 50th (ft)	20	8	23	0	6	
Queue Length 95th (ft)	98	38	78	8	51	
Internal Link Dist (ft)		850	873		761	
Turn Bay Length (ft)	165			52		
Base Capacity (vph)	780	1376	1376	1186	1202	
Starvation Cap Reductn	0	0	0	0	0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.32	0.09	0.23	0.05	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 29.2			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 7.2		Intersection LOS: A	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 45			
70th %ile Actuated Cycle: 33.7			
50th %ile Actuated Cycle: 26.2			
30th %ile Actuated Cycle: 22.4			
10th %ile Actuated Cycle: 18.6			

Splits and Phases: 3: SR 39 (PM) & SR 158 (PM)



Intersection	
Intersection Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	132	123	66	12	25	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	142	138	84	17	29	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	506	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	422	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1513	-	-	-	526	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	662	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1513	-	-	-	477	975
Mov Capacity-2 Maneuver	-	-	-	-	477	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	10.9
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	874
HCM Lane V/C Ratio	0.094	-	-	-	0.302
HCM Control Delay (s)	7.626	-	-	-	10.9
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.31	-	-	-	1.277

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	16.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	233	104	246	43	53	361
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	251	117	311	62	62	435

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	311	0	-	0	929	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	618	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1249	-	-	-	297	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	538	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1249	-	-	-	237	729
Mov Capacity-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	430	-

Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	37.5
HCM LOS			E

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1249	-	-	-	580
HCM Lane V/C Ratio	0.201	-	-	-	0.856
HCM Control Delay (s)	8.604	-	-	-	37.5
HCM Lane LOS	A				E
HCM 95th %tile Q(veh)	0.748	-	-	-	9.394

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.9

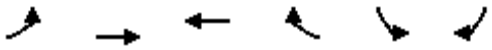
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	253	96	105	51	14	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	272	108	133	74	16	213

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	133	0	-	0	785	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	652	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1452	-	-	-	361	916
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	518	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1452	-	-	-	293	916
Mov Capacity-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	421	-

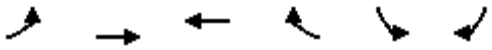
Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	11.3
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	796
HCM Lane V/C Ratio	0.187	-	-	-	0.288
HCM Control Delay (s)	8.05	-	-	-	11.3
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.688	-	-	-	1.195

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	188	104	246	43	53	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165			52	20	0
Storage Lanes	1			1	0	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.886	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1770	1863	1863	1583	1637	0
Flt Permitted	0.571				0.992	
Satd. Flow (perm)	1064	1863	1863	1583	1637	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62	329	
Link Speed (mph)		30	30		30	
Link Distance (ft)		1618	1686		1691	
Travel Time (s)		36.8	38.3		38.4	
Peak Hour Factor	0.93	0.89	0.79	0.69	0.86	0.83
Adj. Flow (vph)	202	117	311	62	62	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	117	311	62	391	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (ft)	20	100	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Detector Phase	4	4	8	8	6	

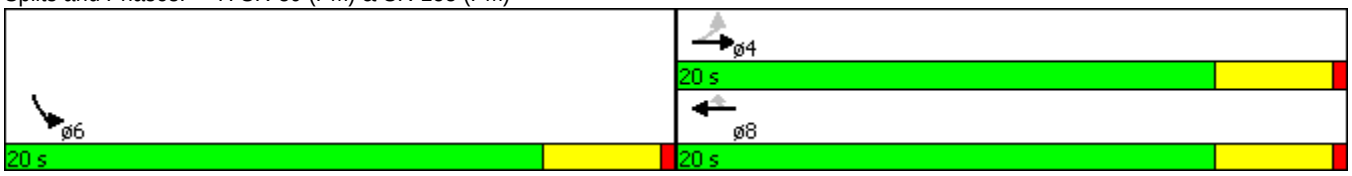


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	Min	
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)	10.3	10.3	10.5	10.5	12.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.44	
v/c Ratio	0.50	0.17	0.43	0.10	0.43	
Control Delay	11.6	6.3	8.5	2.7	4.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.6	6.3	8.5	2.7	4.0	
LOS	B	A	A	A	A	
Approach Delay		9.7	7.5		4.0	
Approach LOS		A	A		A	
90th %ile Green (s)	16.0	16.0	16.0	16.0	13.4	
90th %ile Term Code	Max	Max	Max	Max	Gap	
70th %ile Green (s)	12.8	12.8	12.8	12.8	9.1	
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
50th %ile Green (s)	9.8	9.8	9.8	9.8	6.6	
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
30th %ile Green (s)	7.9	7.9	7.9	7.9	5.5	
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
10th %ile Green (s)	0.0	0.0	0.0	0.0	19.3	
10th %ile Term Code	Skip	Skip	Skip	Skip	Dwell	
Stops (vph)	117	54	140	10	66	
Fuel Used(gal)	3	2	4	1	5	
CO Emissions (g/hr)	242	122	310	45	344	
NOx Emissions (g/hr)	47	24	60	9	67	
VOC Emissions (g/hr)	56	28	72	10	80	
Dilemma Vehicles (#)	0	0	0	0	0	
Queue Length 50th (ft)	15	7	22	0	5	
Queue Length 95th (ft)	64	32	66	7	41	
Internal Link Dist (ft)		1538	1606		1611	
Turn Bay Length (ft)	165			52	20	
Base Capacity (vph)	649	1137	1137	990	1209	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.10	0.27	0.06	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 27.3			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 37.4			
70th %ile Actuated Cycle: 29.9			
50th %ile Actuated Cycle: 24.4			
30th %ile Actuated Cycle: 21.4			
10th %ile Actuated Cycle: 23.3			

Splits and Phases: 7: SR-39 (PM) & SR-158 (PM)



Intersection	
Intersection Delay, s/veh	5.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	105	123	66	12	25	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	113	138	84	17	29	222

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	448	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	364	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1513	-	-	-	568	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	703	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1513	-	-	-	526	975
Mov Capacity-2 Maneuver	-	-	-	-	526	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	10.7
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	887
HCM Lane V/C Ratio	0.075	-	-	-	0.283
HCM Control Delay (s)	7.571	-	-	-	10.7
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.242	-	-	-	1.165

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	188	104	246	43	53	273
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	202	117	311	62	62	329

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	311	0	-	0	832	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	521	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1249	-	-	-	339	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	596	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1249	-	-	-	284	729
Mov Capacity-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	SB
HCM Control Delay, s	5.3	0	22.7
HCM LOS			C

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1249	-	-	-	584
HCM Lane V/C Ratio	0.162	-	-	-	0.669
HCM Control Delay (s)	8.438	-	-	-	22.7
HCM Lane LOS	A				C
HCM 95th %tile Q(veh)	0.577	-	-	-	5.016

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	238	96	105	51	14	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	256	108	133	74	16	178

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	133	0	-	0	753	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	620	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1452	-	-	-	377	916
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	536	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1452	-	-	-	311	916
Mov Capacity-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	441	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	11.1
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	788
HCM Lane V/C Ratio	0.176	-	-	-	0.247
HCM Control Delay (s)	8.009	-	-	-	11.1
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.639	-	-	-	0.971

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.6

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	188	19	171	194	7	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	20	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	269	30	228	231	12	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	269	0	956	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	687	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1295	-	286	770
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	499	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1295	-	236	770
Mov Capacity-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	411	-

Approach	SE	NW	NE
HCM Control Delay, s	0	4.2	11.6
HCM LOS			B

Minor Lane / Major Mvmt	NELn1	NELn2	NWL	NWT	SET	SER
Capacity (veh/h)	236	770	1295	-	-	-
HCM Lane V/C Ratio	0.051	0.109	0.176	-	-	-
HCM Control Delay (s)	21.1	10.2	8.373	-	-	-
HCM Lane LOS	C	B	A			
HCM 95th %tile Q(veh)	0.161	0.366	0.638	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	10.1

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	261	135	156	449	71	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	20
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	373	211	208	535	122	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	373	0	1324	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	951	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1185	-	172	673
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	375	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1185	-	142	673
Mov Capacity-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	309	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.4	56.4
HCM LOS			F

Minor Lane / Major Mvmt	NELn1	NELn2	NWL	NWT	SET	SER
Capacity (veh/h)	142	673	1185	-	-	-
HCM Lane V/C Ratio	0.862	0.19	0.176	-	-	-
HCM Control Delay (s)	103.2	11.6	8.684	-	-	-
HCM Lane LOS	F	B	A			
HCM 95th %tile Q(veh)	5.661	0.697	0.635	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

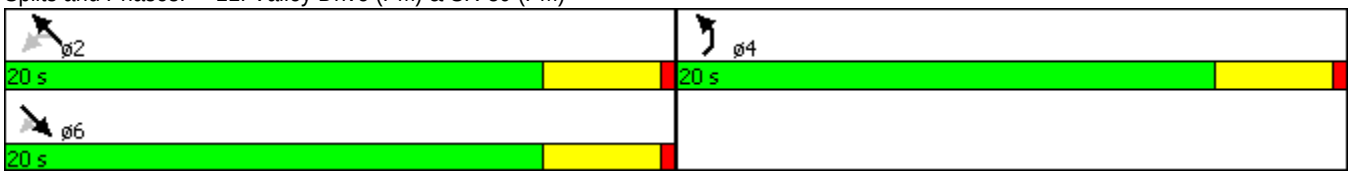
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	261	135	156	449	71	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		160	214		20	20
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850			0.931	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1863	1583	1770	1863	1693	0
Flt Permitted			0.540		0.976	
Satd. Flow (perm)	1863	1583	1006	1863	1693	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		211			128	
Link Speed (mph)	55			55	40	
Link Distance (ft)	956			763	1155	
Travel Time (s)	11.9			9.5	19.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.70	0.64	0.75	0.84	0.58	0.75
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	373	211	208	535	122	128
Shared Lane Traffic (%)						
Lane Group Flow (vph)	373	211	208	535	250	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	6			2	4	
Permitted Phases		6	2			
Detector Phase	6	6	2	2	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	
Recall Mode	Min	Min	Min	Min	None	
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)	18.8	18.8	18.8	18.8	8.1	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.26	
v/c Ratio	0.34	0.21	0.35	0.48	0.47	
Control Delay	6.6	1.9	8.1	8.0	8.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.6	1.9	8.1	8.0	8.4	
LOS	A	A	A	A	A	
Approach Delay	4.9			8.0	8.4	
Approach LOS	A			A	A	
90th %ile Green (s)	16.0	16.0	16.0	16.0	12.1	
90th %ile Term Code	Max	Max	Max	Max	Gap	
70th %ile Green (s)	16.0	16.0	16.0	16.0	9.4	
70th %ile Term Code	Hold	Hold	Max	Max	Gap	
50th %ile Green (s)	15.9	15.9	15.9	15.9	7.8	
50th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
30th %ile Green (s)	17.0	17.0	17.0	17.0	6.3	
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
10th %ile Green (s)	22.1	22.1	22.1	22.1	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	
Stops (vph)	141	17	94	274	68	
Fuel Used(gal)	5	1	3	8	2	
CO Emissions (g/hr)	318	83	193	559	158	
NOx Emissions (g/hr)	62	16	38	109	31	
VOC Emissions (g/hr)	74	19	45	129	37	
Dilemma Vehicles (#)	35	0	0	61	0	
Queue Length 50th (ft)	32	0	18	51	16	
Queue Length 95th (ft)	62	7	47	124	22	
Internal Link Dist (ft)	876			683	1075	
Turn Bay Length (ft)		160	214		20	
Base Capacity (vph)	1106	1026	597	1106	926	
Starvation Cap Reductn	0	0	0	0	0	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.34	0.21	0.35	0.48	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 31.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 36.1			
70th %ile Actuated Cycle: 33.4			
50th %ile Actuated Cycle: 31.7			
30th %ile Actuated Cycle: 31.3			
10th %ile Actuated Cycle: 26.1			

Splits and Phases: 11: Valley Drive (PM) & SR-39 (PM)



Intersection	
Intersection Delay, s/veh	19.8

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	261	135	156	449	71	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	373	211	208	535	122	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	373	0	1324	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	951	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1185	-	172	673
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	375	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1185	-	142	673
Mov Capacity-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	309	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.4	117.3
HCM LOS			F

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	238	1185	-	-	-
HCM Lane V/C Ratio	1.052	0.176	-	-	-
HCM Control Delay (s)	117.3	8.684	-	-	-
HCM Lane LOS	F	A			
HCM 95th %tile Q(veh)	10.497	0.635	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.6

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	231	58	92	305	47	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	20	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	77	70	81	80	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	266	75	131	377	59	139

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	905	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	639	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1298	-	307	773
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	526	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1298	-	276	773
Mov Capacity-2 Maneuver	-	-	-	-	276	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	473	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.1	13.9
HCM LOS			B

Minor Lane / Major Mvmt	NELn1	NELn2	NWL	NWT	SET	SER
Capacity (veh/h)	276	773	1298	-	-	-
HCM Lane V/C Ratio	0.213	0.179	0.101	-	-	-
HCM Control Delay (s)	21.5	10.7	8.086	-	-	-
HCM Lane LOS	C	B	A			
HCM 95th %tile Q(veh)	0.788	0.65	0.337	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

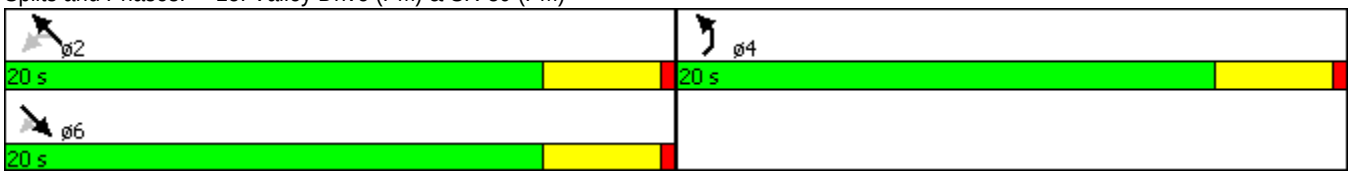
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	215	135	156	362	74	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		160	214		20	20
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.927	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	1863	1583	1770	1863	1689	0
Flt Permitted			0.606		0.978	
Satd. Flow (perm)	1863	1583	1129	1863	1689	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	40	
Link Distance (ft)	1154			1166	1316	
Travel Time (s)	14.3			14.5	22.4	
Peak Hour Factor	0.87	0.77	0.70	0.81	0.80	0.88
Adj. Flow (vph)	247	175	223	447	92	109
Shared Lane Traffic (%)						
Lane Group Flow (vph)	247	175	223	447	201	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	6			2	4	
Permitted Phases		6	2			
Detector Phase	6	6	2	2	4	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min	Min	Min	None	
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)	19.9	19.9	19.9	19.9	9.3	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.28	
v/c Ratio	0.22	0.19	0.33	0.41	0.43	
Control Delay	6.4	6.4	8.2	7.7	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.4	6.4	8.2	7.7	13.1	
LOS	A	A	A	A	B	
Approach Delay	6.4			7.8	13.1	
Approach LOS	A			A	B	
90th %ile Green (s)	16.0	16.0	16.0	16.0	13.0	
90th %ile Term Code	Hold	Hold	Max	Max	Gap	
70th %ile Green (s)	16.8	16.8	16.8	16.8	10.7	
70th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
50th %ile Green (s)	16.6	16.6	16.6	16.6	9.4	
50th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
30th %ile Green (s)	20.3	20.3	20.3	20.3	8.2	
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
10th %ile Green (s)	21.3	21.3	21.3	21.3	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	
Stops (vph)	112	71	94	212	125	
Fuel Used(gal)	4	2	3	7	3	
CO Emissions (g/hr)	275	174	221	502	224	
NOx Emissions (g/hr)	53	34	43	98	44	
VOC Emissions (g/hr)	64	40	51	116	52	
Dilemma Vehicles (#)	27	0	0	46	0	
Queue Length 50th (ft)	23	16	22	46	30	
Queue Length 95th (ft)	58	38	46	99	53	
Internal Link Dist (ft)	1074			1086	1236	
Turn Bay Length (ft)		160	214		20	
Base Capacity (vph)	1099	934	666	1099	819	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.19	0.33	0.41	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 33.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 37			
70th %ile Actuated Cycle: 35.5			
50th %ile Actuated Cycle: 34			
30th %ile Actuated Cycle: 36.5			
10th %ile Actuated Cycle: 25.3			

Splits and Phases: 15: Valley Drive (PM) & SR-39 (PM)



Intersection	
Intersection Delay, s/veh	3.7

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	161	19	171	183	7	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	230	30	228	218	12	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	230	0	904	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	674	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1338	-	307	809
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	506	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1338	-	255	809
Mov Capacity-2 Maneuver	-	-	-	-	255	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	420	-

Approach	SE	NW	NE
HCM Control Delay, s	0	4.2	11.7
HCM LOS			B

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	636	1338	-	-	-
HCM Lane V/C Ratio	0.151	0.17	-	-	-
HCM Control Delay (s)	11.7	8.242	-	-	-
HCM Lane LOS	B	A			
HCM 95th %tile Q(veh)	0.53	0.614	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	6.9

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	215	135	156	362	74	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	77	70	81	80	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	247	175	223	447	92	109

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	247	0	1140	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	893	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1319	-	222	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	400	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1319	-	184	792
Mov Capacity-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	332	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.8	34.7
HCM LOS			D

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	315	1319	-	-	-
HCM Lane V/C Ratio	0.64	0.169	-	-	-
HCM Control Delay (s)	34.7	8.283	-	-	-
HCM Lane LOS	D	A			
HCM 95th %tile Q(veh)	4.13	0.607	-	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.2

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	217	58	92	276	47	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	77	70	81	80	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	75	131	341	59	139

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	249	0	853	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	604	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1317	-	330	790
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	546	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1317	-	297	790
Mov Capacity-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	492	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.2	15.8
HCM LOS			C

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	529	1317	-	-	-
HCM Lane V/C Ratio	0.373	0.1	-	-	-
HCM Control Delay (s)	15.8	8.036	-	-	-
HCM Lane LOS	C	A			
HCM 95th %tile Q(veh)	1.715	0.332	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	16.0
Intersection LOS	C

Approach	SE	NW	NE	SW
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	361	233	414	912
Demand Flow Rate, veh/h	368	238	421	930
Vehicles Circulating, veh/h	802	505	414	230
Vehicles Exiting, veh/h	358	330	756	513
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	27.8	10.0	9.1	16.0
Approach LOS	D	A	A	C

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	L	TR	L	TR
Assumed Moves	LTR	LTR	L	TR	L	TR
RT Channelized						
Lane Util	1.000	1.000	0.299	0.701	0.270	0.730
Critical Headway, s	5.193	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	368	238	126	295	251	679
Cap Entry Lane, veh/h	507	682	747	747	898	898
Entry HV Adj Factor	0.980	0.980	0.984	0.982	0.980	0.980
Flow Entry, veh/h	361	233	124	290	246	666
Cap Entry, veh/h	497	668	735	733	880	880
V/C Ratio	0.726	0.349	0.169	0.395	0.280	0.756
Control Delay, s/veh	27.8	10.0	6.7	10.1	7.1	19.4
LOS	D	A	A	B	A	C
95th %tile Queue, veh	6	2	1	2	1	7

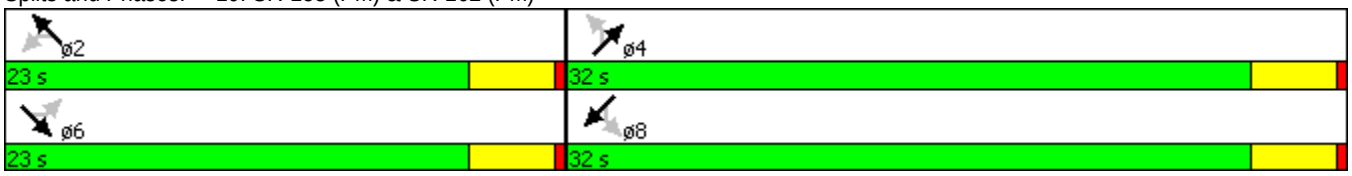
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	75	45	155	12	57	102	109	201	12	138	324	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	30		30	30		30	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.925			0.924			0.991			0.968	
Flt Protected		0.986			0.996		0.950			0.950		
Satd. Flow (prot)	0	1699	0	0	1714	0	1770	1846	0	1770	1803	0
Flt Permitted		0.865			0.965		0.253			0.582		
Satd. Flow (perm)	0	1490	0	0	1661	0	471	1846	0	1084	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		126			128			9			36	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1952			2006			1716			1747	
Travel Time (s)		44.4			45.6			39.0			39.7	
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Adj. Flow (vph)	100	60	201	18	84	131	124	272	18	246	523	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	361	0	0	233	0	124	290	0	246	666	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	23.0	23.0		23.0	23.0		32.0	32.0		32.0	32.0	
Total Split (%)	41.8%	41.8%		41.8%	41.8%		58.2%	58.2%		58.2%	58.2%	
Maximum Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
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)		12.5			12.5		20.8	20.8		20.8	20.8	
Actuated g/C Ratio		0.30			0.30		0.49	0.49		0.49	0.49	
v/c Ratio		0.68			0.40		0.53	0.32		0.46	0.73	
Control Delay		16.4			8.7		18.5	7.7		10.9	14.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		16.4			8.7		18.5	7.7		10.9	14.1	
LOS		B			A		B	A		B	B	
Approach Delay		16.4			8.7			10.9			13.3	
Approach LOS		B			A			B			B	
90th %ile Green (s)	19.0	19.0		19.0	19.0		28.0	28.0		28.0	28.0	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	17.1	17.1		17.1	17.1		28.0	28.0		28.0	28.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Max	Max	
50th %ile Green (s)	13.0	13.0		13.0	13.0		22.7	22.7		22.7	22.7	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	9.3	9.3		9.3	9.3		16.2	16.2		16.2	16.2	
30th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	6.2	6.2		6.2	6.2		10.9	10.9		10.9	10.9	
10th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
Stops (vph)		149			62		77	105		80	277	
Fuel Used(gal)		6			3		2	4		3	8	
CO Emissions (g/hr)		414			232		160	263		184	585	
NOx Emissions (g/hr)		81			45		31	51		36	114	
VOC Emissions (g/hr)		96			54		37	61		43	135	
Dilemma Vehicles (#)		0			0		0	0		0	0	
Queue Length 50th (ft)		48			19		18	34		33	102	
Queue Length 95th (ft)		94			39		71	69		49	130	
Internal Link Dist (ft)		1872			1926			1636			1667	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		797			882		330	1299		761	1277	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.45			0.26		0.38	0.22		0.32	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 42.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 67.8%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 55			
70th %ile Actuated Cycle: 53.1			
50th %ile Actuated Cycle: 43.7			
30th %ile Actuated Cycle: 33.5			
10th %ile Actuated Cycle: 25.1			

Splits and Phases: 19: SR-158 (PM) & SR-162 (PM)



Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	45	99	80	4	96	57	76	119	4	65	98	37
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	132	104	6	141	73	86	161	6	116	158	59
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	14.5	12.6	12.1	12.7
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	20%	100%	0%
Vol Thru, %	0%	97%	61%	44%	0%	73%
Vol Right, %	0%	3%	36%	36%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	123	157	224	65	135
LT Vol	0	119	96	99	0	98
Through Vol	0	4	57	80	0	37
RT Vol	76	0	4	45	65	0
Lane Flow Rate	86	167	220	296	116	217
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.175	0.308	0.368	0.484	0.228	0.383
Departure Headway (Hd)	7.283	6.649	6.121	5.892	7.058	6.352
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	496	536	590	607	505	561
Service Time	4.983	4.448	4.121	3.988	4.853	4.145
HCM Lane V/C Ratio	0.173	0.312	0.373	0.488	0.23	0.387
HCM Control Delay	11.5	12.4	12.6	14.5	12	13.1
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.6	1.3	1.7	2.6	0.9	1.8

Notes

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Intersection	
Intersection Delay, s/veh	40.4
Intersection LOS	E

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	75	45	155	12	57	102	109	201	12	138	324	90
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	60	201	18	84	131	124	272	18	246	523	143
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	31.3	19.7	22.7	57.3
HCM LOS	D	C	C	F

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	7%	27%	100%	0%
Vol Thru, %	0%	94%	33%	16%	0%	78%
Vol Right, %	0%	6%	60%	56%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	213	171	275	138	414
LT Vol	0	201	57	45	0	324
Through Vol	0	12	102	155	0	90
RT Vol	109	0	12	75	138	0
Lane Flow Rate	124	290	233	361	246	665
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.302	0.664	0.523	0.763	0.582	1
Departure Headway (Hd)	8.787	8.245	8.083	7.604	8.498	7.822
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	409	438	447	477	424	466
Service Time	6.542	6	6.137	5.649	6.268	5.592
HCM Lane V/C Ratio	0.303	0.662	0.521	0.757	0.58	1.427
HCM Control Delay	15.3	25.9	19.7	31.3	22.5	70.2
HCM Lane LOS	C	D	C	D	C	F
HCM 95th-tile Q	1.3	4.7	3	6.6	3.6	13.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	24.5
Intersection LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	69	73	94	3	74	59	156	145	6	69	151	77
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	177	97	125	4	117	84	205	193	9	84	216	140
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	32.6	17	17.9	26.6
HCM LOS	D	C	C	D

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	2%	29%	100%	0%
Vol Thru, %	0%	96%	54%	31%	0%	66%
Vol Right, %	0%	4%	43%	40%	0%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	151	136	236	69	228
LT Vol	0	145	74	73	0	151
Through Vol	0	6	59	94	0	77
RT Vol	156	0	3	69	69	0
Lane Flow Rate	205	202	206	400	84	356
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.482	0.444	0.445	0.794	0.195	0.749
Departure Headway (Hd)	8.455	7.908	7.786	7.157	8.345	7.583
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	455	461	503	430	477
Service Time	6.212	5.665	5.849	5.208	6.098	5.335
HCM Lane V/C Ratio	0.48	0.444	0.447	0.795	0.195	0.746
HCM Control Delay	18.9	16.9	17	32.6	13.1	29.8
HCM Lane LOS	C	C	C	D	B	D
HCM 95th-tile Q	2.6	2.2	2.2	7.4	0.7	6.3

Notes

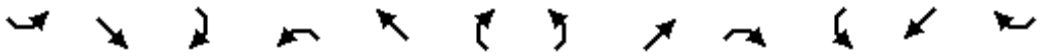
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.0
Intersection LOS	A

Approach	SE	NW	NE	SW
Entry Lanes	1	1	2	2
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	342	179	301	543
Demand Flow Rate, veh/h	349	183	306	554
Vehicles Circulating, veh/h	462	371	274	230
Vehicles Exiting, veh/h	322	209	537	324
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.5	7.3	6.1	9.0
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Right	Left	Right
Designated Moves	LTR	LTR	L	TR	L	TR
Assumed Moves	LTR	LTR	L	TR	L	TR
RT Channelized						
Lane Util	1.000	1.000	0.412	0.588	0.235	0.765
Critical Headway, s	5.193	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	349	183	126	180	130	424
Cap Entry Lane, veh/h	712	780	859	859	898	898
Entry HV Adj Factor	0.979	0.980	0.984	0.982	0.977	0.981
Flow Entry, veh/h	342	179	124	177	127	416
Cap Entry, veh/h	697	764	845	844	877	881
V/C Ratio	0.490	0.235	0.147	0.210	0.145	0.472
Control Delay, s/veh	12.5	7.3	5.7	6.4	5.5	10.1
LOS	B	A	A	A	A	B
95th %tile Queue, veh	3	1	1	1	1	3

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	61	45	155	12	57	60	109	118	12	71	191	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	30		30	30		30	100		0	100		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.921			0.942			0.985			0.961	
Flt Protected		0.988			0.995		0.950			0.950		
Satd. Flow (prot)	0	1695	0	0	1746	0	1770	1835	0	1770	1790	0
Flt Permitted		0.880			0.944		0.456			0.646		
Satd. Flow (perm)	0	1510	0	0	1656	0	849	1835	0	1203	1790	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		201			77			17			53	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1952			2006			1716			1747	
Travel Time (s)		44.4			45.6			39.0			39.7	
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Adj. Flow (vph)	81	60	201	18	84	77	124	159	18	127	308	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	0	0	179	0	124	177	0	127	416	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	

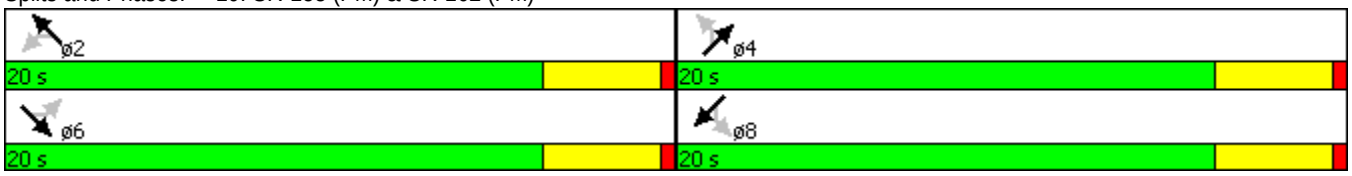


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
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)		9.9			9.9		11.4	11.4		11.4	11.4	
Actuated g/C Ratio		0.33			0.33		0.38	0.38		0.38	0.38	
v/c Ratio		0.54			0.30		0.38	0.25		0.27	0.58	
Control Delay		7.5			6.6		11.1	7.0		8.6	10.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		7.5			6.6		11.1	7.0		8.6	10.3	
LOS		A			A		B	A		A	B	
Approach Delay		7.5			6.6			8.7			9.9	
Approach LOS		A			A			A			A	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	Max	Max		Hold	Hold		Max	Max		Max	Max	
70th %ile Green (s)	11.1	11.1		11.1	11.1		15.3	15.3		15.3	15.3	
70th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
50th %ile Green (s)	8.3	8.3		8.3	8.3		11.5	11.5		11.5	11.5	
50th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
30th %ile Green (s)	6.2	6.2		6.2	6.2		8.5	8.5		8.5	8.5	
30th %ile Term Code	Gap	Gap		Hold	Hold		Hold	Hold		Gap	Gap	
10th %ile Green (s)	8.7	8.7		8.7	8.7		6.8	6.8		6.8	6.8	
10th %ile Term Code	Dwell	Dwell		Dwell	Dwell		Hold	Hold		Gap	Gap	
Stops (vph)		90			52		70	64		42	148	
Fuel Used(gal)		5			2		2	2		1	5	
CO Emissions (g/hr)		340			173		146	158		92	342	
NOx Emissions (g/hr)		66			34		28	31		18	66	
VOC Emissions (g/hr)		79			40		34	37		21	79	
Dilemma Vehicles (#)		0			0		0	0		0	0	
Queue Length 50th (ft)		15			10		10	13		10	33	
Queue Length 95th (ft)		42			26		48	39		25	65	
Internal Link Dist (ft)		1872			1926			1636			1667	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		940			969		479	1044		680	1034	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.36			0.18		0.26	0.17		0.19	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 29.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 40			
70th %ile Actuated Cycle: 34.4			
50th %ile Actuated Cycle: 27.8			
30th %ile Actuated Cycle: 22.7			
10th %ile Actuated Cycle: 23.5			

Splits and Phases: 19: SR-158 (PM) & SR-162 (PM)



Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	38	99	80	4	96	36	76	76	4	54	76	33
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	132	104	6	141	46	86	103	6	96	123	52
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.6	11.1	10.7	11.1
HCM LOS	B	B	B	B

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	18%	100%	0%
Vol Thru, %	0%	95%	71%	46%	0%	70%
Vol Right, %	0%	5%	26%	37%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	80	136	217	54	109
LT Vol	0	76	96	99	0	76
Through Vol	0	4	36	80	0	33
RT Vol	76	0	4	38	54	0
Lane Flow Rate	86	109	193	287	96	175
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.164	0.19	0.302	0.432	0.18	0.292
Departure Headway (Hd)	6.84	6.295	5.62	5.423	6.726	6.001
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	523	568	636	662	532	597
Service Time	4.602	4.056	3.679	3.476	4.483	3.758
HCM Lane V/C Ratio	0.164	0.192	0.303	0.434	0.18	0.293
HCM Control Delay	11	10.5	11.1	12.6	11	11.2
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.6	0.7	1.3	2.2	0.7	1.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	20.5
Intersection LOS	C

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	61	45	155	12	57	60	109	118	12	71	191	68
Peak Hour Factor	0.75	0.75	0.77	0.66	0.68	0.78	0.88	0.74	0.65	0.56	0.62	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	60	201	18	84	77	124	159	18	127	308	108
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	20.2	14.1	14.1	26.4
HCM LOS	C	B	B	D

Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	9%	23%	100%	0%
Vol Thru, %	0%	91%	44%	17%	0%	74%
Vol Right, %	0%	9%	47%	59%	0%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	130	129	261	71	259
LT Vol	0	118	57	45	0	191
Through Vol	0	12	60	155	0	68
RT Vol	109	0	12	61	71	0
Lane Flow Rate	124	178	179	343	127	416
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.273	0.364	0.355	0.627	0.265	0.787
Departure Headway (Hd)	7.947	7.365	7.138	6.588	7.515	6.813
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	486	501	545	477	528
Service Time	5.726	5.143	5.22	4.654	5.282	4.579
HCM Lane V/C Ratio	0.275	0.366	0.357	0.629	0.266	0.788
HCM Control Delay	13.7	14.3	14.1	20.2	13	30.5
HCM Lane LOS	B	B	B	C	B	D
HCM 95th-tile Q	1.1	1.6	1.6	4.3	1.1	7.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

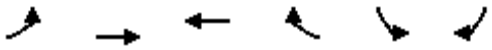
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	45	99	80	4	96	57	76	119	4	65	98	37
Peak Hour Factor	0.39	0.75	0.75	0.76	0.63	0.70	0.76	0.75	0.69	0.82	0.70	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	132	107	5	152	81	100	159	6	79	140	67
Number of Lanes	0	1	0	0	1	0	1	1	0	1	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	17.4	13.6	12.6	13.1
HCM LOS	C	B	B	B

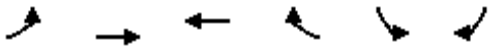
Lane	NELn1	NELn2	NWLn1	SELn1	SWLn1	SWLn2
Vol Left, %	100%	0%	3%	20%	100%	0%
Vol Thru, %	0%	97%	61%	44%	0%	73%
Vol Right, %	0%	3%	36%	36%	0%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	123	157	224	65	135
LT Vol	0	119	96	99	0	98
Through Vol	0	4	57	80	0	37
RT Vol	76	0	4	45	65	0
Lane Flow Rate	100	164	239	354	79	207
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.208	0.318	0.413	0.591	0.164	0.388
Departure Headway (Hd)	7.494	6.957	6.226	6.008	7.456	6.747
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	479	516	579	602	481	533
Service Time	5.241	4.704	4.27	4.045	5.204	4.494
HCM Lane V/C Ratio	0.209	0.318	0.413	0.588	0.164	0.388
HCM Control Delay	12.2	12.9	13.6	17.4	11.7	13.7
HCM Lane LOS	B	B	B	C	B	B
HCM 95th-tile Q	0.8	1.4	2	3.8	0.6	1.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	283	110	261	46	56	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165			52	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.880	
Flt Protected	0.950				0.994	
Satd. Flow (prot)	1770	1863	1863	1583	1629	0
Flt Permitted	0.531				0.994	
Satd. Flow (perm)	989	1863	1863	1583	1629	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				67	459	
Link Speed (mph)		55	55		15	
Link Distance (ft)		930	953		841	
Travel Time (s)		11.5	11.8		38.2	
Peak Hour Factor	0.93	0.89	0.79	0.69	0.86	0.83
Adj. Flow (vph)	304	124	330	67	65	510
Shared Lane Traffic (%)						
Lane Group Flow (vph)	304	124	330	67	575	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (ft)	20	100	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Detector Phase	4	4	8	8	6	

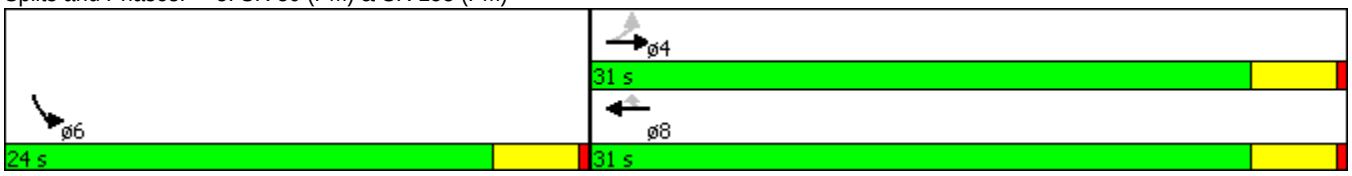


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	31.0	31.0	31.0	31.0	24.0	
Total Split (%)	56.4%	56.4%	56.4%	56.4%	43.6%	
Maximum Green (s)	27.0	27.0	27.0	27.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	Min	
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)	17.0	17.0	16.3	16.3	15.0	
Actuated g/C Ratio	0.50	0.50	0.48	0.48	0.44	
v/c Ratio	0.62	0.13	0.37	0.08	0.59	
Control Delay	14.8	6.7	8.1	2.7	6.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.8	6.7	8.1	2.7	6.1	
LOS	B	A	A	A	A	
Approach Delay		12.5	7.2		6.1	
Approach LOS		B	A		A	
90th %ile Green (s)	27.0	27.0	27.0	27.0	20.0	
90th %ile Term Code	Max	Max	Hold	Hold	Max	
70th %ile Green (s)	22.5	22.5	22.5	22.5	14.7	
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
50th %ile Green (s)	15.1	15.1	15.1	15.1	8.8	
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
30th %ile Green (s)	10.9	10.9	10.9	10.9	5.8	
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
10th %ile Green (s)	0.0	0.0	0.0	0.0	9.8	
10th %ile Term Code	Skip	Skip	Skip	Skip	Dwell	
Stops (vph)	190	52	135	8	113	
Fuel Used(gal)	6	2	5	0	5	
CO Emissions (g/hr)	423	123	316	32	345	
NOx Emissions (g/hr)	82	24	61	6	67	
VOC Emissions (g/hr)	98	29	73	7	80	
Dilemma Vehicles (#)	0	12	32	0	0	
Queue Length 50th (ft)	33	10	30	0	15	
Queue Length 95th (ft)	144	42	91	9	83	
Internal Link Dist (ft)		850	873		761	
Turn Bay Length (ft)	165			52		
Base Capacity (vph)	778	1466	1466	1260	1217	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.08	0.23	0.05	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 34.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 68.6%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 55			
70th %ile Actuated Cycle: 45.2			
50th %ile Actuated Cycle: 31.9			
30th %ile Actuated Cycle: 24.7			
10th %ile Actuated Cycle: 13.8			

Splits and Phases: 3: SR 39 (PM) & SR 158 (PM)



Intersection	
Intersection Delay, s/veh	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	154	131	70	12	27	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	147	89	17	31	261

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	567	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	478	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1506	-	-	-	485	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	624	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1506	-	-	-	432	969
Mov Capacity-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	555	-

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	11.4
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1506	-	-	-	855
HCM Lane V/C Ratio	0.11	-	-	-	0.343
HCM Control Delay (s)	7.686	-	-	-	11.4
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.37	-	-	-	1.529

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	36.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	283	110	261	46	56	423
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	304	124	330	67	65	510

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	330	0	-	0	1062	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	732	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1229	-	-	-	247	712
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	476	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1229	-	-	-	186	712
Mov Capacity-2 Maneuver	-	-	-	-	186	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	358	-

Approach	EB	WB	SB
HCM Control Delay, s	6.3	0	85.2
HCM LOS			F

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1229	-	-	-	539
HCM Lane V/C Ratio	0.248	-	-	-	1.066
HCM Control Delay (s)	8.89	-	-	-	85.2
HCM Lane LOS	A				F
HCM 95th %tile Q(veh)	0.979	-	-	-	17.085

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	6.2

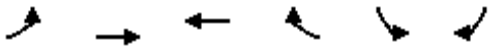
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	281	102	112	55	15	202
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	302	115	142	80	17	243

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	142	0	-	0	861	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	719	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1441	-	-	-	326	906
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	483	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1441	-	-	-	258	906
Mov Capacity-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	382	-

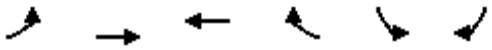
Approach	EB	WB	SB
HCM Control Delay, s	5.9	0	12
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1441	-	-	-	776
HCM Lane V/C Ratio	0.21	-	-	-	0.336
HCM Control Delay (s)	8.16	-	-	-	12
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.792	-	-	-	1.485

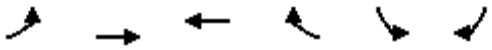
Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	200	110	261	46	56	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	165			52	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.886	
Flt Protected	0.950				0.992	
Satd. Flow (prot)	1770	1863	1863	1583	1637	0
Flt Permitted	0.543				0.992	
Satd. Flow (perm)	1011	1863	1863	1583	1637	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				67	349	
Link Speed (mph)		55	55		15	
Link Distance (ft)		930	953		841	
Travel Time (s)		11.5	11.8		38.2	
Peak Hour Factor	0.93	0.89	0.79	0.69	0.86	0.83
Adj. Flow (vph)	215	124	330	67	65	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	124	330	67	414	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	
Detector Template	Left	Thru	Thru	Right	Left	
Leading Detector (ft)	20	100	100	20	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Detector Phase	4	4	8	8	6	



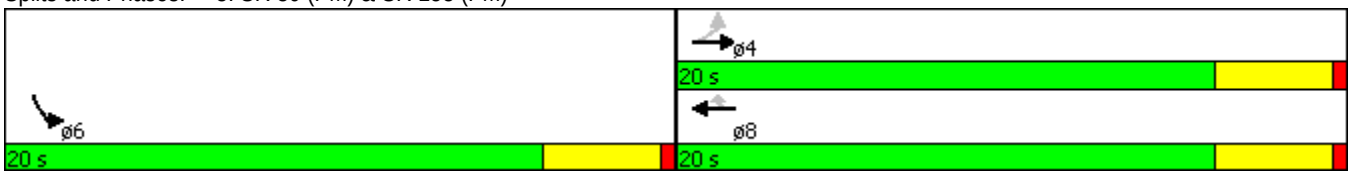
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	Min	
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)	10.9	10.9	11.0	11.0	12.2	
Actuated g/C Ratio	0.39	0.39	0.40	0.40	0.44	
v/c Ratio	0.54	0.17	0.45	0.10	0.45	
Control Delay	13.0	6.6	8.8	2.8	4.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.0	6.6	8.8	2.8	4.0	
LOS	B	A	A	A	A	
Approach Delay		10.6	7.8		4.0	
Approach LOS		B	A		A	
90th %ile Green (s)	16.0	16.0	16.0	16.0	14.9	
90th %ile Term Code	Max	Max	Max	Max	Gap	
70th %ile Green (s)	14.2	14.2	14.2	14.2	9.4	
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
50th %ile Green (s)	10.6	10.6	10.6	10.6	6.7	
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
30th %ile Green (s)	8.4	8.4	8.4	8.4	5.5	
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	
10th %ile Green (s)	0.0	0.0	0.0	0.0	17.5	
10th %ile Term Code	Skip	Skip	Skip	Skip	Dwell	
Stops (vph)	131	57	150	10	68	
Fuel Used(gal)	4	2	5	0	3	
CO Emissions (g/hr)	289	130	338	34	238	
NOx Emissions (g/hr)	56	25	66	7	46	
VOC Emissions (g/hr)	67	30	78	8	55	
Dilemma Vehicles (#)	0	16	40	0	0	
Queue Length 50th (ft)	17	8	24	0	6	
Queue Length 95th (ft)	78	36	77	8	42	
Internal Link Dist (ft)		850	873		761	
Turn Bay Length (ft)	165			52		
Base Capacity (vph)	611	1127	1127	984	1194	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.11	0.29	0.07	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 27.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 38.9			
70th %ile Actuated Cycle: 31.6			
50th %ile Actuated Cycle: 25.3			
30th %ile Actuated Cycle: 21.9			
10th %ile Actuated Cycle: 21.5			

Splits and Phases: 3: SR 39 (PM) & SR 158 (PM)



Intersection	
Intersection Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	112	131	70	12	27	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	147	89	17	31	235

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	89	0	-	0	477	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	388	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1506	-	-	-	547	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	686	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1506	-	-	-	503	969
Mov Capacity-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	10.9
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1506	-	-	-	874
HCM Lane V/C Ratio	0.08	-	-	-	0.305
HCM Control Delay (s)	7.598	-	-	-	10.9
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.26	-	-	-	1.293

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	11.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	200	110	261	46	56	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	215	124	330	67	65	349

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	330	0	-	0	884	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	554	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1229	-	-	-	316	712
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	575	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1229	-	-	-	261	712
Mov Capacity-2 Maneuver	-	-	-	-	261	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	474	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	27.5
HCM LOS			D

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1229	-	-	-	560
HCM Lane V/C Ratio	0.175	-	-	-	0.74
HCM Control Delay (s)	8.549	-	-	-	27.5
HCM Lane LOS	A				D
HCM 95th %tile Q(veh)	0.633	-	-	-	6.338

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	252	102	112	55	15	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	165	-	-	52	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	89	79	69	86	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	115	142	80	17	189

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	142	0	-	0	799	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	657	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1441	-	-	-	355	906
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	516	-
Time blocked-Platoon, %		-	-	-		
Mov Capacity-1 Maneuver	1441	-	-	-	288	906
Mov Capacity-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	11.4
HCM LOS			B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1441	-	-	-	767
HCM Lane V/C Ratio	0.188	-	-	-	0.269
HCM Control Delay (s)	8.076	-	-	-	11.4
HCM Lane LOS	A				B
HCM 95th %tile Q(veh)	0.692	-	-	-	1.089

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	312	143	165	517	76	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		160	214		20	20
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.931	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1863	1583	1770	1863	1693	0
Flt Permitted			0.479		0.976	
Satd. Flow (perm)	1863	1583	892	1863	1693	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		223			129	
Link Speed (mph)	55			55	40	
Link Distance (ft)	956			763	1155	
Travel Time (s)	11.9			9.5	19.7	
Peak Hour Factor	0.70	0.64	0.75	0.84	0.58	0.75
Adj. Flow (vph)	446	223	220	615	131	136
Shared Lane Traffic (%)						
Lane Group Flow (vph)	446	223	220	615	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	6			2	4	
Permitted Phases		6	2			
Detector Phase	6	6	2	2	4	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	25.0	25.0	25.0	25.0	20.0	
Total Split (%)	55.6%	55.6%	55.6%	55.6%	44.4%	
Maximum Green (s)	21.0	21.0	21.0	21.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min	Min	Min	None	
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)	21.7	21.7	21.7	21.7	8.8	
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.25	
v/c Ratio	0.39	0.21	0.40	0.53	0.51	
Control Delay	6.9	1.8	9.0	8.6	10.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.9	1.8	9.0	8.6	10.3	
LOS	A	A	A	A	B	
Approach Delay	5.2			8.7	10.3	
Approach LOS	A			A	B	
90th %ile Green (s)	21.0	21.0	21.0	21.0	13.7	
90th %ile Term Code	Max	Max	Max	Max	Gap	
70th %ile Green (s)	21.0	21.0	21.0	21.0	10.5	
70th %ile Term Code	Hold	Hold	Max	Max	Gap	
50th %ile Green (s)	18.1	18.1	18.1	18.1	8.6	
50th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
30th %ile Green (s)	17.7	17.7	17.7	17.7	6.7	
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
10th %ile Green (s)	22.3	22.3	22.3	22.3	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	
Stops (vph)	166	15	101	314	78	
Fuel Used(gal)	5	1	3	9	3	
CO Emissions (g/hr)	378	84	208	646	177	
NOx Emissions (g/hr)	74	16	40	126	34	
VOC Emissions (g/hr)	88	19	48	150	41	
Dilemma Vehicles (#)	36	0	0	62	0	
Queue Length 50th (ft)	43	0	22	68	21	
Queue Length 95th (ft)	82	7	58	164	30	
Internal Link Dist (ft)	876			683	1075	
Turn Bay Length (ft)		160	214		20	
Base Capacity (vph)	1221	1114	584	1221	862	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.20	0.38	0.50	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 35.1			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 46.0%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 42.7			
70th %ile Actuated Cycle: 39.5			
50th %ile Actuated Cycle: 34.7			
30th %ile Actuated Cycle: 32.4			
10th %ile Actuated Cycle: 26.3			

Splits and Phases: 11: Valley Drive (PM) & SR-39 (PM)

Intersection	
Intersection Delay, s/veh	3.7

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	213	20	182	216	8	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	304	31	243	257	14	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	304	0	1046	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	742	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1257	-	253	736
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	471	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1257	-	204	736
Mov Capacity-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	380	-

Approach	SE	NW	NE
HCM Control Delay, s	0	4.2	13.1
HCM LOS			B

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	546	1257	-	-	-
HCM Lane V/C Ratio	0.189	0.193	-	-	-
HCM Control Delay (s)	13.1	8.548	-	-	-
HCM Lane LOS	B	A			
HCM 95th %tile Q(veh)	0.69	0.714	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	42

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	312	143	165	517	76	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	446	223	220	615	131	136

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	446	0	1501	446
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	1055	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1114	-	134	612
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	335	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1114	-	# 108	612
Mov Capacity-2 Maneuver	-	-	-	-	# 108	-
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	269	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.4	271.1
HCM LOS			F

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	186	1114	-	-	-
HCM Lane V/C Ratio	1.436	0.197	-	-	-
HCM Control Delay (s)	271.1	9.025	-	-	-
HCM Lane LOS	F	A			
HCM 95th %tile Q(veh)	16.28	0.733	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.5

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	258	61	98	338	50	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	77	70	81	80	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	297	79	140	417	62	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	297	0	994	297
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	697	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1264	-	272	742
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	494	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1264	-	242	742
Mov Capacity-2 Maneuver	-	-	-	-	242	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	439	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.1	19.2
HCM LOS			C

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	459	1264	-	-	-
HCM Lane V/C Ratio	0.456	0.111	-	-	-
HCM Control Delay (s)	19.2	8.203	-	-	-
HCM Lane LOS	C	A			
HCM 95th %tile Q(veh)	2.335	0.373	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

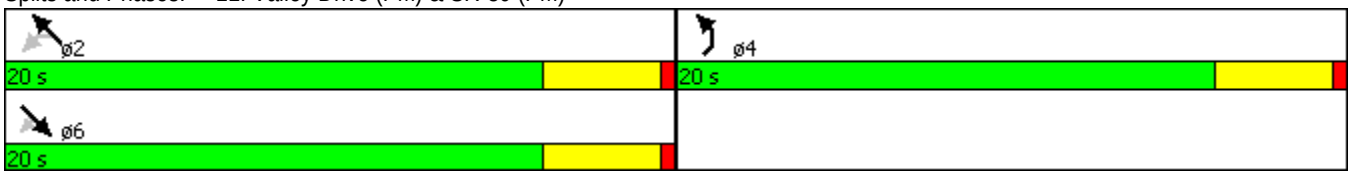
Lane Group	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Volume (vph)	229	143	165	384	76	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		160	214		20	20
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.931	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1863	1583	1770	1863	1693	0
Flt Permitted			0.563		0.976	
Satd. Flow (perm)	1863	1583	1049	1863	1693	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		223			136	
Link Speed (mph)	55			55	40	
Link Distance (ft)	956			763	1155	
Travel Time (s)	11.9			9.5	19.7	
Peak Hour Factor	0.70	0.64	0.75	0.84	0.58	0.75
Adj. Flow (vph)	327	223	220	457	131	136
Shared Lane Traffic (%)						
Lane Group Flow (vph)	327	223	220	457	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (ft)	100	20	20	100	20	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	6	20	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	6			2	4	
Permitted Phases		6	2			
Detector Phase	6	6	2	2	4	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	16.0	16.0	16.0	16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Min	Min	Min	Min	None	
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)	17.6	17.6	17.6	17.6	8.2	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.27	
v/c Ratio	0.31	0.22	0.37	0.43	0.48	
Control Delay	6.6	1.9	8.5	7.6	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.6	1.9	8.5	7.6	8.2	
LOS	A	A	A	A	A	
Approach Delay	4.7			7.9	8.2	
Approach LOS	A			A	A	
90th %ile Green (s)	16.0	16.0	16.0	16.0	12.6	
90th %ile Term Code	Max	Max	Max	Max	Gap	
70th %ile Green (s)	16.0	16.0	16.0	16.0	9.6	
70th %ile Term Code	Hold	Hold	Max	Max	Gap	
50th %ile Green (s)	13.4	13.4	13.4	13.4	7.9	
50th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
30th %ile Green (s)	14.4	14.4	14.4	14.4	6.3	
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	
10th %ile Green (s)	21.3	21.3	21.3	21.3	0.0	
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	
Stops (vph)	124	18	102	226	71	
Fuel Used(gal)	4	1	3	7	2	
CO Emissions (g/hr)	280	88	208	465	167	
NOx Emissions (g/hr)	54	17	40	90	33	
VOC Emissions (g/hr)	65	20	48	108	39	
Dilemma Vehicles (#)	32	0	0	54	0	
Queue Length 50th (ft)	27	0	19	42	15	
Queue Length 95th (ft)	56	7	51	105	23	
Internal Link Dist (ft)	876			683	1075	
Turn Bay Length (ft)		160	214		20	
Base Capacity (vph)	1124	1043	632	1124	961	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	SET	SER	NWL	NWT	NEL	NER
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.21	0.35	0.41	0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 30.7			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 36.6			
70th %ile Actuated Cycle: 33.6			
50th %ile Actuated Cycle: 29.3			
30th %ile Actuated Cycle: 28.7			
10th %ile Actuated Cycle: 25.3			

Splits and Phases: 11: Valley Drive (PM) & SR-39 (PM)



Intersection	
Intersection Delay, s/veh	3.8

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	177	20	182	194	8	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	253	31	243	231	14	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	969	253
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	716	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1312	-	281	786
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	484	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1312	-	229	786
Mov Capacity-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	394	-

Approach	SE	NW	NE
HCM Control Delay, s	0	4.3	12.3
HCM LOS			B

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	593	1312	-	-	-
HCM Lane V/C Ratio	0.174	0.185	-	-	-
HCM Control Delay (s)	12.3	8.366	-	-	-
HCM Lane LOS	B	A			
HCM 95th %tile Q(veh)	0.625	0.677	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.1

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	229	143	165	384	76	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	64	75	84	58	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	327	223	220	457	131	136

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	327	0	1224	327
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	897	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1233	-	198	714
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	398	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1233	-	163	714
Mov Capacity-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	327	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.8	94.1
HCM LOS			F

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	269	1233	-	-	-
HCM Lane V/C Ratio	0.993	0.178	-	-	-
HCM Control Delay (s)	94.1	8.553	-	-	-
HCM Lane LOS	F	A			
HCM 95th %tile Q(veh)	9.885	0.648	-	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.5

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	230	61	98	293	50	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	160	214	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	77	70	81	80	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	79	140	362	62	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	906	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	642	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1300	-	307	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	524	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1300	-	274	775
Mov Capacity-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	468	-

Approach	SE	NW	NE
HCM Control Delay, s	0	2.3	17.2
HCM LOS			C

Minor Lane / Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	501	1300	-	-	-
HCM Lane V/C Ratio	0.417	0.108	-	-	-
HCM Control Delay (s)	17.2	8.103	-	-	-
HCM Lane LOS	C	A			
HCM 95th %tile Q(veh)	2.035	0.361	-	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Appendix B – 2014 Traffic Volumes

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 1

Groups Printed- General Traffic

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	1	12	0	0	13	0	2	0	0	2	0	1	0	0	1	12	5	3	0	20	36
06:15 AM	1	10	1	0	12	0	2	1	0	3	0	4	2	0	6	23	8	2	0	33	54
06:30 AM	2	10	2	0	14	0	4	1	0	5	1	6	3	0	10	25	3	5	0	33	62
06:45 AM	4	13	5	0	22	4	6	1	0	11	0	5	5	0	10	16	9	2	0	27	70
Total	8	45	8	0	61	4	14	3	0	21	1	16	10	0	27	76	25	12	0	113	222
07:00 AM	15	14	0	0	29	3	18	0	0	21	0	6	6	0	12	26	4	3	0	33	95
07:15 AM	17	17	2	0	36	0	26	2	0	28	1	1	9	0	11	21	15	7	0	43	118
07:30 AM	4	18	7	0	29	3	15	1	0	19	0	8	6	0	14	42	26	15	0	83	145
07:45 AM	8	14	8	0	30	6	22	1	0	29	3	8	9	0	20	31	14	9	0	54	133
Total	44	63	17	0	124	12	81	4	0	97	4	23	30	0	57	120	59	34	0	213	491
08:00 AM	3	12	10	0	25	3	7	2	0	12	2	10	8	0	20	27	16	4	0	47	104
08:15 AM	8	27	5	0	40	3	13	2	0	18	2	15	11	0	28	26	19	7	0	52	138
08:30 AM	5	10	17	0	32	8	42	2	0	52	1	17	11	0	29	10	38	7	0	55	168
08:45 AM	10	19	15	0	44	11	22	0	0	33	1	27	20	0	48	18	20	9	0	47	172
Total	26	68	47	0	141	25	84	6	0	115	6	69	50	0	125	81	93	27	0	201	582
09:00 AM	7	12	11	0	30	10	9	0	0	19	0	9	26	0	35	18	12	11	0	41	125
09:15 AM	6	14	9	0	29	5	14	1	0	20	1	22	23	0	46	17	15	2	0	34	129
09:30 AM	3	20	11	0	34	6	10	3	0	19	2	14	20	0	36	25	9	5	0	39	128
09:45 AM	11	13	5	0	29	10	10	3	0	23	2	12	19	0	33	10	10	6	0	26	111
Total	27	59	36	0	122	31	43	7	0	81	5	57	88	0	150	70	46	24	0	140	493
10:00 AM	2	11	5	0	18	6	6	1	0	13	1	14	16	0	31	14	5	1	0	20	82
10:15 AM	10	8	7	0	25	1	6	0	0	7	1	13	15	0	29	23	12	6	0	41	102
10:30 AM	10	20	7	1	38	6	13	3	1	23	1	13	15	0	29	23	9	13	1	46	136
10:45 AM	6	13	4	0	23	8	9	1	0	18	0	11	13	0	24	21	6	8	0	35	100
Total	28	52	23	1	104	21	34	5	1	61	3	51	59	0	113	81	32	28	1	142	420
11:00 AM	7	12	8	0	27	0	5	1	0	6	1	7	10	0	18	23	13	2	0	38	89
11:15 AM	4	9	10	0	23	12	8	2	0	22	2	12	13	0	27	14	6	6	0	26	98
11:30 AM	9	11	7	0	27	12	20	2	0	34	3	12	14	0	29	22	10	6	0	38	128
11:45 AM	11	11	10	0	32	6	17	0	0	23	3	18	19	0	40	15	14	11	0	40	135
Total	31	43	35	0	109	30	50	5	0	85	9	49	56	0	114	74	43	25	0	142	450
12:00 PM	6	13	9	0	28	8	20	2	0	30	2	14	19	0	35	14	13	8	0	35	128
12:15 PM	4	15	4	0	23	5	11	3	0	19	2	15	13	0	30	12	17	9	0	38	110
12:30 PM	11	15	8	0	34	12	10	3	0	25	1	12	18	0	31	21	16	3	0	40	130
12:45 PM	11	6	1	0	18	6	16	2	0	24	1	15	17	0	33	16	11	10	0	37	112
Total	32	49	22	0	103	31	57	10	0	98	6	56	67	0	129	63	57	30	0	150	480
01:00 PM	4	10	10	0	24	5	4	0	0	9	1	12	20	0	33	19	10	7	0	36	102
01:15 PM	8	14	7	0	29	9	6	2	0	17	2	10	17	0	29	23	13	6	0	42	117
01:30 PM	11	6	10	0	27	8	13	4	0	25	3	8	26	0	37	24	8	6	0	38	127
01:45 PM	9	9	12	0	30	10	13	1	0	24	4	12	15	0	31	24	9	11	0	44	129
Total	32	39	39	0	110	32	36	7	0	75	10	42	78	0	130	90	40	30	0	160	475
02:00 PM	9	19	5	1	34	3	6	1	0	10	1	5	19	0	25	18	13	4	0	35	104
02:15 PM	13	11	2	0	26	8	16	0	0	24	4	11	17	0	32	19	12	10	0	41	123
02:30 PM	9	13	2	0	24	7	15	3	0	25	1	7	20	1	29	18	18	15	0	51	129
02:45 PM	6	16	10	0	32	15	14	1	2	32	1	9	17	0	27	17	10	8	0	35	126
Total	37	59	19	1	116	33	51	5	2	91	7	32	73	1	113	72	53	37	0	162	482
03:00 PM	11	21	8	0	40	9	15	3	0	27	4	22	21	0	47	18	23	10	0	51	165
03:15 PM	9	14	14	0	37	4	16	3	0	23	4	17	19	0	40	23	27	15	0	65	165
03:30 PM	11	16	12	0	39	12	24	2	0	38	1	18	26	0	45	18	16	11	0	45	167
03:45 PM	15	21	10	0	46	9	16	2	0	27	2	11	34	0	47	24	10	5	0	39	159
Total	46	72	44	0	162	34	71	10	0	115	11	68	100	0	179	83	76	41	0	200	656

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 2

Groups Printed- General Traffic

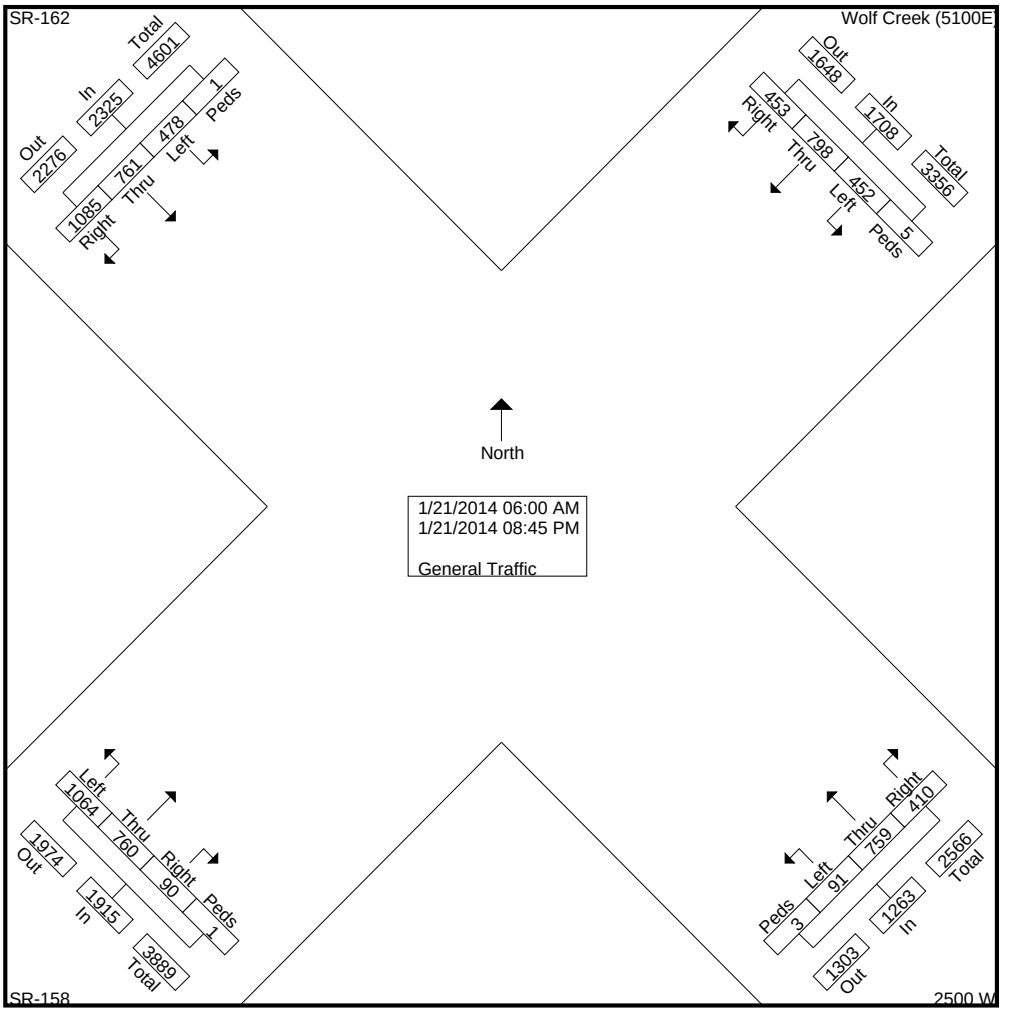
	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	11	22	7	0	40	8	23	4	0	35	2	8	26	0	36	25	14	15	0	54	165
04:15 PM	5	25	7	0	37	17	31	9	0	57	1	11	25	0	37	22	24	10	0	56	187
04:30 PM	13	32	11	3	59	13	20	1	0	34	1	15	7	0	23	27	15	11	0	53	169
04:45 PM	24	23	9	0	56	11	22	1	0	34	1	14	26	0	41	16	11	14	0	41	172
Total	53	102	34	3	192	49	96	15	0	160	5	48	84	0	137	90	64	50	0	204	693
05:00 PM	10	18	10	0	38	8	11	0	0	19	2	33	45	0	80	22	15	22	0	59	196
05:15 PM	15	22	12	0	49	8	13	1	0	22	1	42	62	0	105	19	24	11	0	54	230
05:30 PM	8	9	13	0	30	13	12	1	0	26	1	14	29	0	44	19	17	13	0	49	149
05:45 PM	8	13	7	0	28	11	7	4	0	22	2	12	34	0	48	15	13	14	0	42	140
Total	41	62	42	0	145	40	43	6	0	89	6	101	170	0	277	75	69	60	0	204	715
06:00 PM	10	13	11	0	34	4	20	1	0	25	0	16	17	0	33	7	17	9	0	33	125
06:15 PM	8	6	17	0	31	4	14	0	0	18	0	10	32	0	42	11	8	11	0	30	121
06:30 PM	3	8	4	0	15	5	8	1	0	14	0	12	22	0	34	14	13	8	0	35	98
06:45 PM	6	7	7	0	20	6	4	2	0	12	1	8	19	0	28	10	9	8	0	27	87
Total	27	34	39	0	100	19	46	4	0	69	1	46	90	0	137	42	47	36	0	125	431
07:00 PM	7	7	18	0	32	6	9	1	0	16	2	13	15	0	30	10	4	9	0	23	101
07:15 PM	2	1	4	0	7	7	9	1	0	17	3	15	15	0	33	8	12	3	0	23	80
07:30 PM	3	10	4	0	17	8	10	0	0	18	4	11	15	0	30	10	9	4	0	23	88
07:45 PM	1	11	3	0	15	8	4	0	0	12	0	19	12	0	31	8	11	6	0	25	83
Total	13	29	29	0	71	29	32	2	0	63	9	58	57	0	124	36	36	22	0	94	352
08:00 PM	4	8	1	0	13	3	10	0	0	13	3	12	15	0	30	4	7	2	0	13	69
08:15 PM	1	7	4	0	12	7	5	1	0	13	0	11	10	0	21	9	6	5	0	20	66
08:30 PM	2	3	10	0	15	4	3	1	0	8	1	10	17	0	28	6	2	4	0	12	63
08:45 PM	1	4	3	0	8	6	3	0	0	9	3	11	10	0	24	13	6	11	0	30	71
Total	8	22	18	0	48	20	21	2	0	43	7	44	52	0	103	32	21	22	0	75	269
Grand Total	453	798	452	5	1708	410	759	91	3	1263	90	760	1064	1	1915	1085	761	478	1	2325	7211
Apprch %	26.5	46.7	26.5	0.3		32.5	60.1	7.2	0.2		4.7	39.7	55.6	0.1		46.7	32.7	20.6	0		
Total %	6.3	11.1	6.3	0.1	23.7	5.7	10.5	1.3	0	17.5	1.2	10.5	14.8	0	26.6	15	10.6	6.6	0	32.2	

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 3



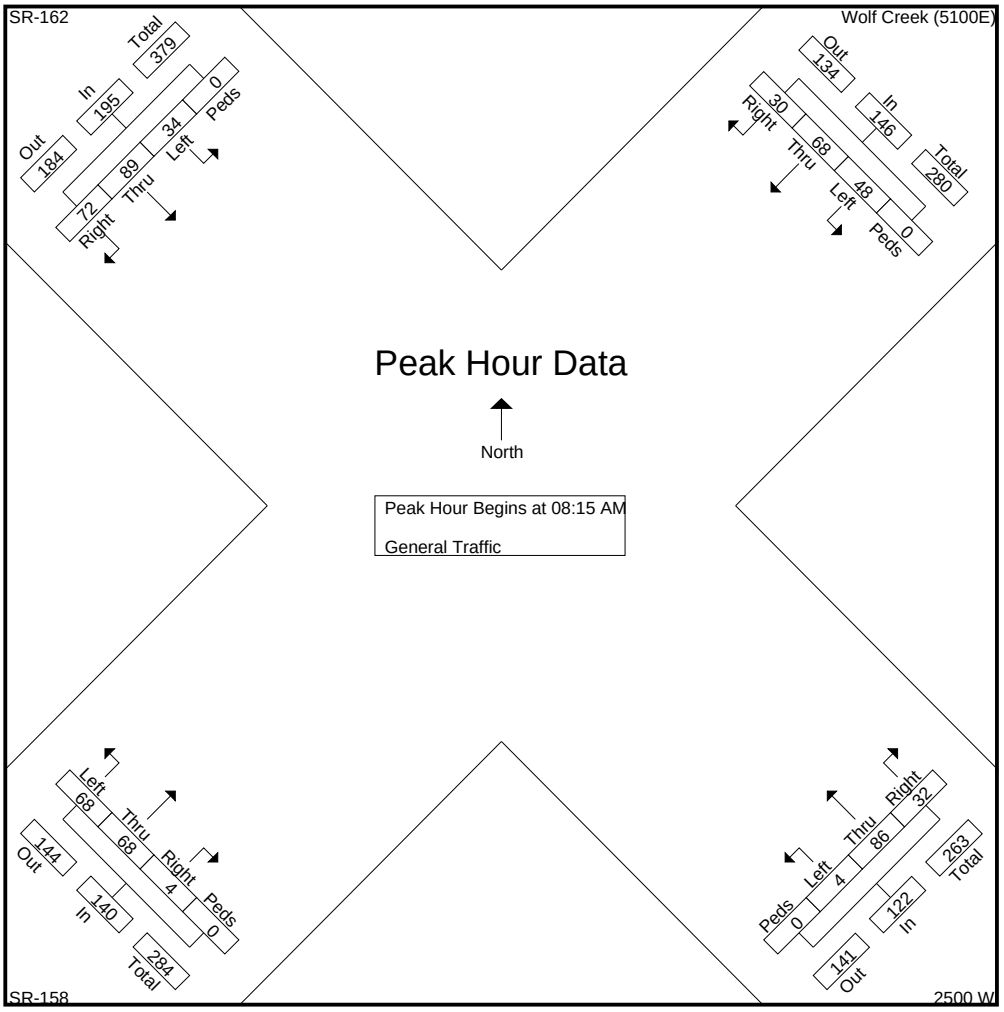
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 4

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	8	**27**	5	0	40	3	13	**2**	0	18	**2**	15	11	0	28	**26**	19	7	0	52	138
08:30 AM	5	10	**17**	0	32	8	**42**	2	0	**52**	1	17	11	0	29	10	**38**	7	0	**55**	168
08:45 AM	**10**	19	15	0	**44**	**11**	22	0	0	33	1	**27**	20	0	**48**	18	20	9	0	47	**172**
09:00 AM	7	12	11	0	30	10	9	0	0	19	0	9	**26**	0	35	18	12	**11**	0	41	125
Total Volume	30	68	48	0	146	32	86	4	0	122	4	68	68	0	140	72	89	34	0	195	603
% App. Total	20.5	46.6	32.9	0		26.2	70.5	3.3	0		2.9	48.6	48.6	0		36.9	45.6	17.4	0		
PHF	.750	.630	.706	.000	.830	.727	.512	.500	.000	.587	.500	.630	.654	.000	.729	.692	.586	.773	.000	.886	.876



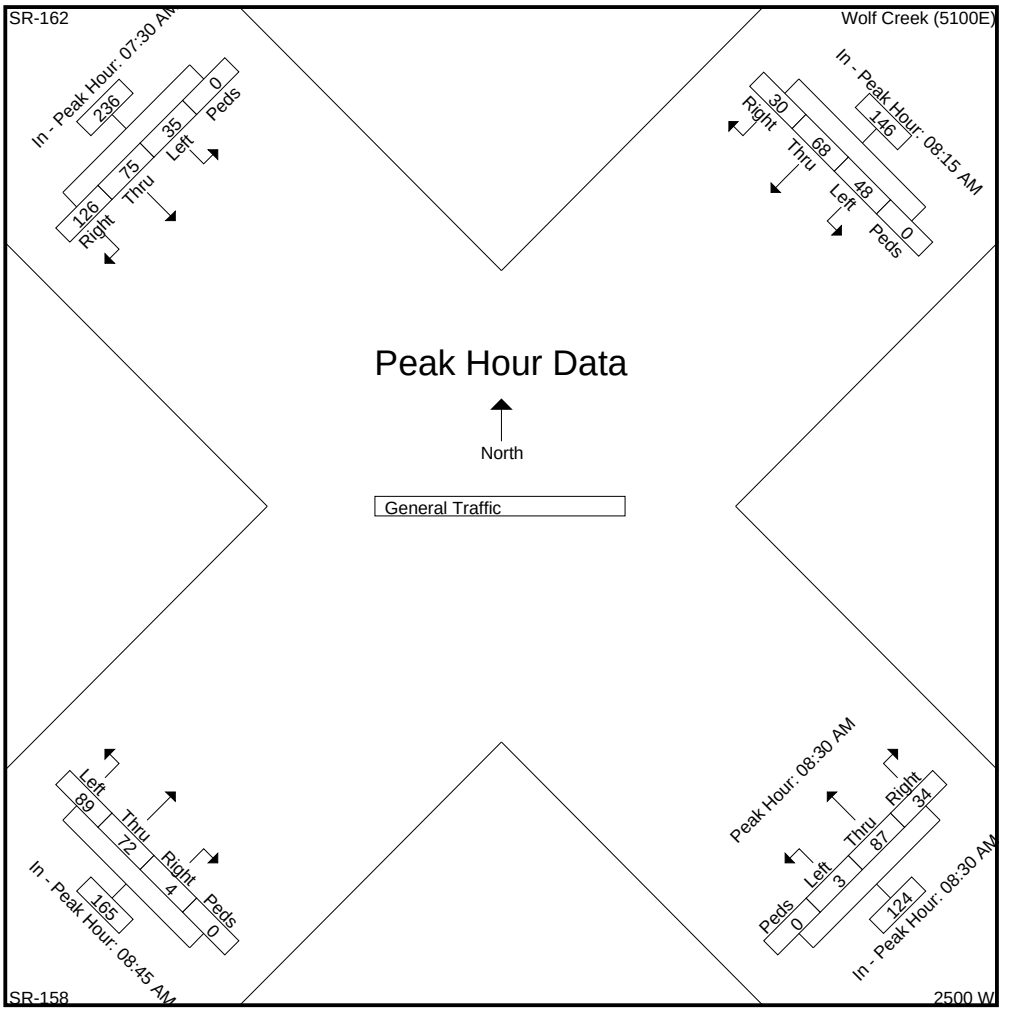
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 5

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:15 AM					08:30 AM					08:45 AM					07:30 AM					
+0 mins.	8	**27**	5	0	40	8	**42**	**2**	0	**52**	1	**27**	20	0	**48**	**42**	**26**	**15**	0	**83**	
+15 mins.	5	10	**17**	0	32	**11**	22	0	0	33	0	9	**26**	0	35	31	14	9	0	54	
+30 mins.	**10**	19	15	0	**44**	10	9	0	0	19	1	22	23	0	46	27	16	4	0	47	
+45 mins.	7	12	11	0	30	5	14	1	0	20	**2**	14	20	0	36	26	19	7	0	52	
Total Volume	30	68	48	0	146	34	87	3	0	124	4	72	89	0	165	126	75	35	0	236	
% App. Total	20.5	46.6	32.9	0		27.4	70.2	2.4	0		2.4	43.6	53.9	0		53.4	31.8	14.8	0		
PHF	.750	.630	.706	.000	.830	.773	.518	.375	.000	.596	.500	.667	.856	.000	.859	.750	.721	.583	.000	.711	



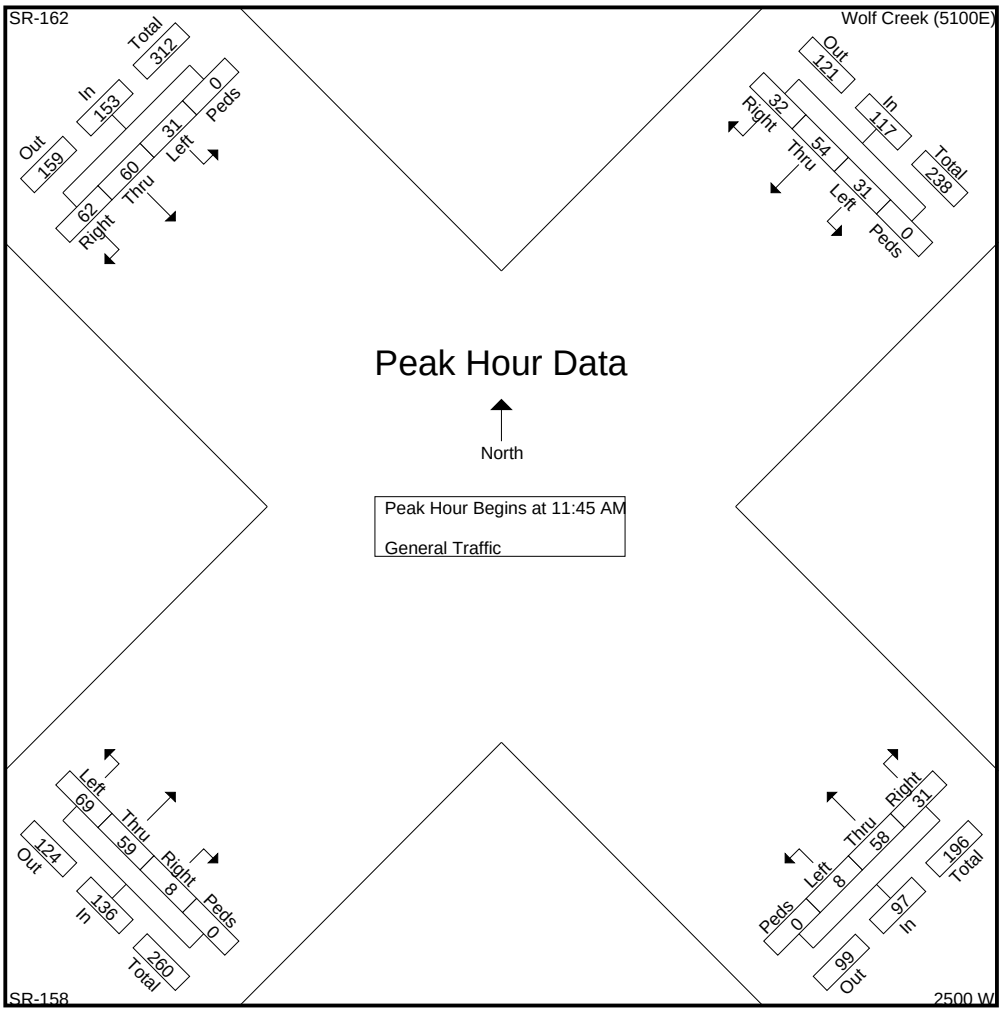
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 6

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	**11**	11	**10**	0	32	6	17	0	0	23	**3**	**18**	**19**	0	**40**	15	14	**11**	0	**40**	**135**
12:00 PM	6	13	9	0	28	8	**20**	2	0	**30**	2	14	19	0	35	14	13	8	0	35	128
12:15 PM	4	**15**	4	0	23	5	11	**3**	0	19	2	15	13	0	30	12	**17**	9	0	38	110
12:30 PM	11	15	8	0	**34**	**12**	10	3	0	25	1	12	18	0	31	**21**	16	3	0	40	130
Total Volume	32	54	31	0	117	31	58	8	0	97	8	59	69	0	136	62	60	31	0	153	503
% App. Total	27.4	46.2	26.5	0		32	59.8	8.2	0		5.9	43.4	50.7	0		40.5	39.2	20.3	0		
PHF	.727	.900	.775	.000	.860	.646	.725	.667	.000	.808	.667	.819	.908	.000	.850	.738	.882	.705	.000	.956	.931



L2 Data Collection

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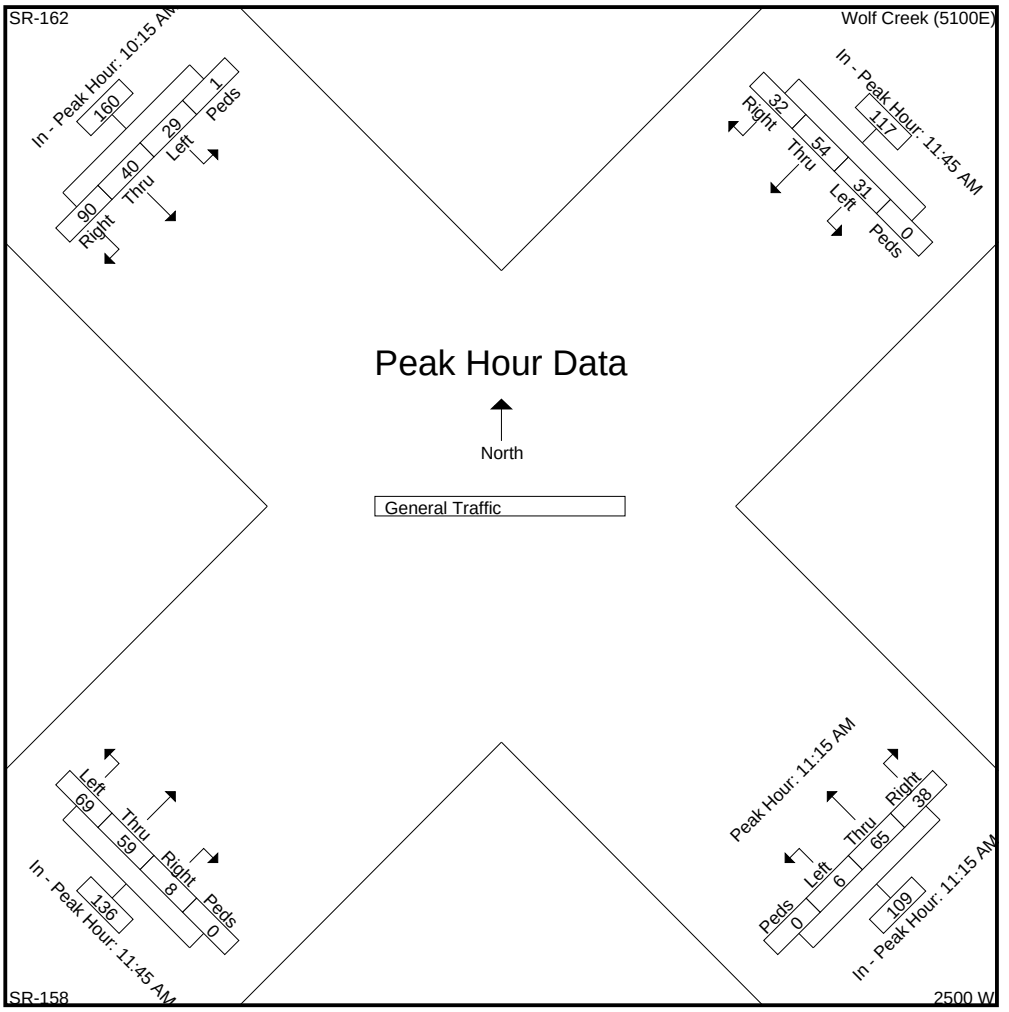
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 7

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	11:45 AM					11:15 AM					11:45 AM					10:15 AM					
+0 mins.	**11**	11	**10**	0	32	**12**	8	**2**	0	22	**3**	**18**	**19**	0	**40**	**23**	12	6	0	41	
+15 mins.	6	13	9	0	28	12	**20**	2	0	**34**	2	14	19	0	35	23	9	**13**	**1**	**46**	
+30 mins.	4	**15**	4	0	23	6	17	0	0	23	2	15	13	0	30	21	6	8	0	35	
+45 mins.	11	15	8	0	**34**	8	20	2	0	30	1	12	18	0	31	23	**13**	2	0	38	
Total Volume	32	54	31	0	117	38	65	6	0	109	8	59	69	0	136	90	40	29	1	160	
% App. Total	27.4	46.2	26.5	0		34.9	59.6	5.5	0		5.9	43.4	50.7	0		56.2	25	18.1	0.6		
PHF	.727	.900	.775	.000	.860	.792	.813	.750	.000	.801	.667	.819	.908	.000	.850	.978	.769	.558	.250	.870	



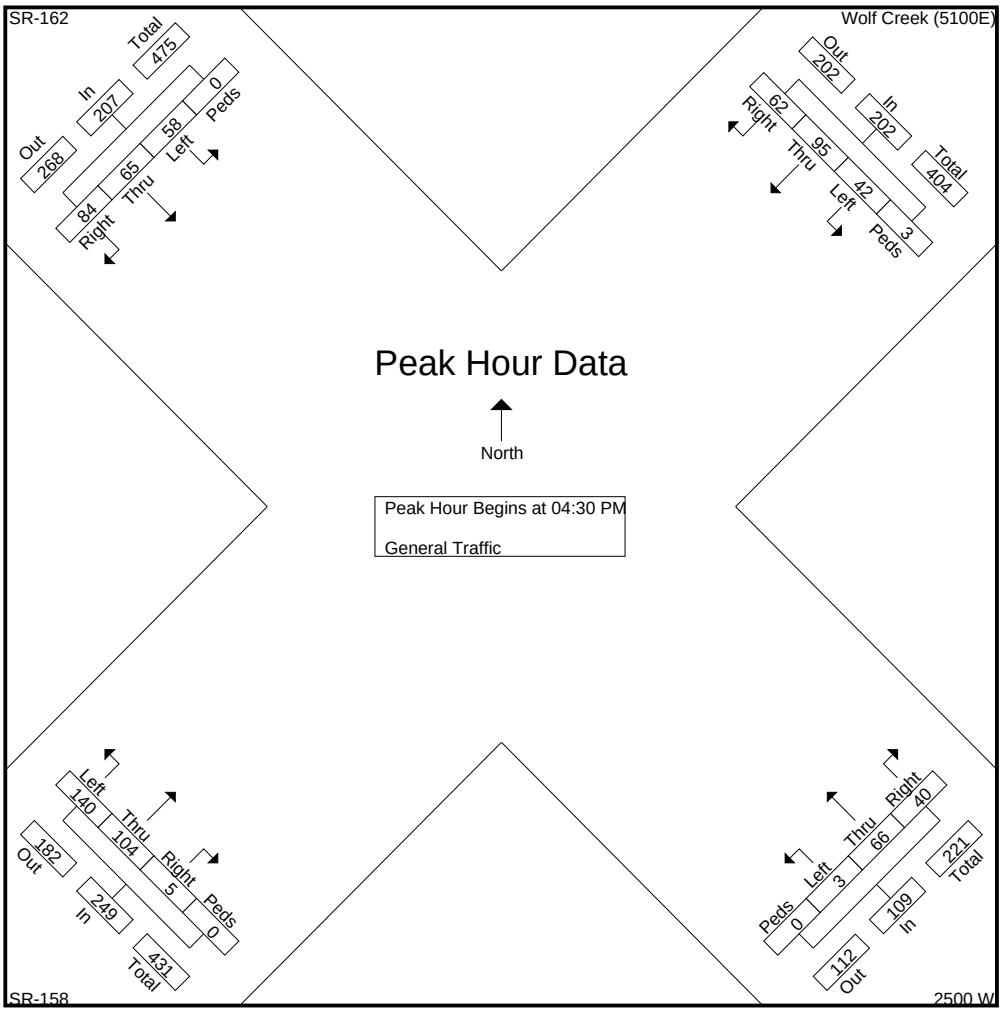
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 8

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	13	**32**	11	**3**	**59**	**13**	20	**1**	0	**34**	1	15	7	0	23	**27**	15	11	0	53	169
04:45 PM	**24**	23	9	0	56	11	**22**	1	0	34	1	14	26	0	41	16	11	14	0	41	172
05:00 PM	10	18	10	0	38	8	11	0	0	19	**2**	33	45	0	80	22	15	**22**	0	**59**	196
05:15 PM	15	22	**12**	0	49	8	13	1	0	22	1	**42**	**62**	0	**105**	19	**24**	11	0	54	**230**
Total Volume	62	95	42	3	202	40	66	3	0	109	5	104	140	0	249	84	65	58	0	207	767
% App. Total	30.7	47	20.8	1.5		36.7	60.6	2.8	0		2	41.8	56.2	0		40.6	31.4	28	0		
PHF	.646	.742	.875	.250	.856	.769	.750	.750	.000	.801	.625	.619	.565	.000	.593	.778	.677	.659	.000	.877	.834



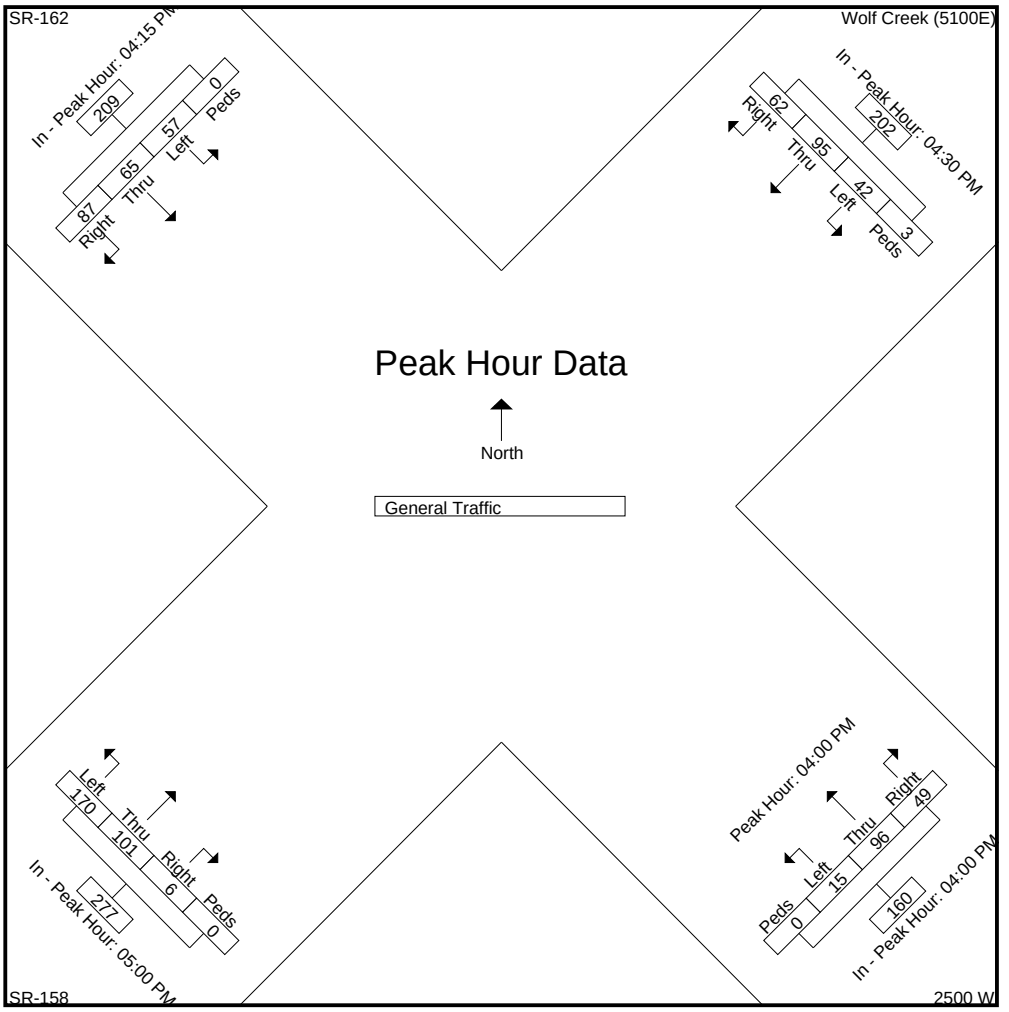
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 9

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:30 PM					04:00 PM					05:00 PM					04:15 PM					
+0 mins.	13	**32**	11	**3**	**59**	8	23	4	0	35	**2**	33	45	0	80	22	**24**	10	0	56	
+15 mins.	**24**	23	9	0	56	**17**	**31**	**9**	0	**57**	1	**42**	**62**	0	**105**	**27**	15	11	0	53	
+30 mins.	10	18	10	0	38	13	20	1	0	34	1	14	29	0	44	16	11	14	0	41	
+45 mins.	15	22	**12**	0	49	11	22	1	0	34	2	12	34	0	48	22	15	**22**	0	**59**	
Total Volume	62	95	42	3	202	49	96	15	0	160	6	101	170	0	277	87	65	57	0	209	
% App. Total	30.7	47	20.8	1.5		30.6	60	9.4	0		2.2	36.5	61.4	0		41.6	31.1	27.3	0		
PHF	.646	.742	.875	.250	.856	.721	.774	.417	.000	.702	.750	.601	.685	.000	.660	.806	.677	.648	.000	.886	



L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162
Site Code :
Start Date : 1/21/2014
Page No : 10

Image 1

L2 Data Collection

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Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 1

Groups Printed- General Traffic

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	1	0	0	1	0	1	0	0	1	2	2	1	0	5	2	1	0	0	3	10
06:15 AM	1	4	0	0	5	1	1	0	0	2	0	6	3	0	9	1	2	0	0	3	19
06:30 AM	0	4	1	0	5	0	3	1	0	4	0	0	0	0	0	6	1	2	0	9	18
06:45 AM	1	6	2	0	9	0	3	1	0	4	0	5	1	0	6	4	2	3	0	9	28
Total	2	15	3	0	20	1	8	2	0	11	2	13	5	0	20	13	6	5	0	24	75
07:00 AM	1	7	1	0	9	2	1	1	0	4	1	8	2	0	11	2	3	4	0	9	33
07:15 AM	4	7	3	0	14	2	5	0	0	7	1	4	3	0	8	7	3	3	0	13	42
07:30 AM	0	3	3	0	6	3	3	0	0	6	1	10	8	0	19	7	10	7	0	24	55
07:45 AM	7	16	5	0	28	3	2	2	0	7	3	13	8	0	24	11	12	4	0	27	86
Total	12	33	12	0	57	10	11	3	0	24	6	35	21	0	62	27	28	18	0	73	216
08:00 AM	2	6	6	0	14	0	6	0	0	6	1	9	9	0	19	12	8	8	0	28	67
08:15 AM	5	8	2	0	15	6	6	0	0	12	1	16	15	0	32	15	2	12	0	29	88
08:30 AM	8	12	5	0	25	4	5	2	0	11	6	35	14	0	55	2	8	8	0	18	109
08:45 AM	8	19	3	0	30	7	5	1	0	13	2	19	26	0	47	15	7	9	0	31	121
Total	23	45	16	0	84	17	22	3	0	42	10	79	64	0	153	44	25	37	0	106	385
09:00 AM	14	17	6	0	37	4	7	0	0	11	2	27	26	0	55	12	7	12	0	31	134
09:15 AM	10	20	8	0	38	9	9	1	0	19	4	31	14	0	49	16	5	10	0	31	137
09:30 AM	6	14	9	0	29	8	8	5	0	21	0	30	26	0	56	11	13	12	0	36	142
09:45 AM	6	25	8	0	39	6	11	0	0	17	3	23	17	1	44	15	14	16	0	45	145
Total	36	76	31	0	143	27	35	6	0	68	9	111	83	1	204	54	39	50	0	143	558
10:00 AM	8	19	6	0	33	9	5	0	0	14	2	28	17	0	47	11	14	12	0	37	131
10:15 AM	14	17	15	0	46	4	12	2	0	18	4	20	13	0	37	20	5	8	1	34	135
10:30 AM	13	16	7	0	36	10	9	4	0	23	2	19	19	0	40	27	12	13	0	52	151
10:45 AM	5	11	7	0	23	0	10	1	0	11	2	12	13	0	27	14	8	4	0	26	87
Total	40	63	35	0	138	23	36	7	0	66	10	79	62	0	151	72	39	37	1	149	504
11:00 AM	5	18	11	0	34	7	10	1	0	18	2	23	14	0	39	20	9	4	0	33	124
11:15 AM	9	15	13	0	37	6	12	3	0	21	6	16	20	0	42	20	9	8	0	37	137
11:30 AM	7	18	12	0	37	10	19	0	0	29	1	7	21	0	29	20	9	8	0	37	132
11:45 AM	14	9	8	0	31	10	14	2	0	26	1	13	20	0	34	23	11	9	0	43	134
Total	35	60	44	0	139	33	55	6	0	94	10	59	75	0	144	83	38	29	0	150	527
12:00 PM	9	9	6	0	24	9	19	3	0	31	2	22	21	0	45	19	10	19	0	48	148
12:15 PM	18	19	2	0	39	9	8	1	0	18	3	15	17	0	35	13	13	7	0	33	125
12:30 PM	14	15	6	0	35	10	9	1	0	20	0	20	26	0	46	22	9	14	0	45	146
12:45 PM	13	19	8	0	40	5	15	0	0	20	1	16	14	0	31	33	15	11	0	59	150
Total	54	62	22	0	138	33	51	5	0	89	6	73	78	0	157	87	47	51	0	185	569
01:00 PM	8	19	5	0	32	7	6	2	0	15	3	29	24	0	56	21	17	9	0	47	150
01:15 PM	8	25	7	0	40	7	15	1	0	23	3	20	23	0	46	18	9	9	0	36	145
01:30 PM	14	15	5	0	34	5	13	3	0	21	0	18	13	0	31	26	7	9	0	42	128
01:45 PM	10	22	3	0	35	9	12	2	0	23	5	15	19	0	39	24	11	8	0	43	140
Total	40	81	20	0	141	28	46	8	0	82	11	82	79	0	172	89	44	35	0	168	563
02:00 PM	5	19	9	0	33	7	14	3	0	24	2	15	21	1	39	17	5	10	0	32	128
02:15 PM	17	18	8	0	43	5	21	4	0	30	4	12	18	0	34	18	17	9	0	44	151
02:30 PM	8	19	13	0	40	6	8	3	0	17	3	16	15	0	34	18	7	6	0	31	122
02:45 PM	12	23	7	0	42	5	15	2	0	22	2	20	16	0	38	19	5	12	0	36	138
Total	42	79	37	0	158	23	58	12	0	93	11	63	70	1	145	72	34	37	0	143	539
03:00 PM	13	26	12	0	51	10	11	0	0	21	4	21	33	0	58	14	12	9	0	35	165
03:15 PM	11	29	14	0	54	9	20	3	0	32	4	29	20	0	53	24	8	13	0	45	184
03:30 PM	19	29	7	0	55	12	13	4	0	29	4	21	22	0	47	21	6	8	0	35	166
03:45 PM	17	33	20	0	70	8	8	7	0	23	2	26	28	0	56	22	10	11	0	43	192
Total	60	117	53	0	230	39	52	14	0	105	14	97	103	0	214	81	36	41	0	158	707

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 2

Groups Printed- General Traffic

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	10	33	12	0	55	12	17	7	0	36	5	20	25	0	50	34	8	11	0	53	194
04:15 PM	15	47	19	0	81	11	13	1	0	25	2	26	30	0	58	26	9	18	0	53	217
04:30 PM	14	57	12	0	83	18	11	1	0	30	1	38	21	0	60	50	7	12	0	69	242
04:45 PM	22	34	21	0	77	13	10	2	0	25	3	22	22	0	47	29	16	14	0	59	208
Total	61	171	64	0	296	54	51	11	0	116	11	106	98	0	215	139	40	55	0	234	861
05:00 PM	23	38	9	0	70	9	14	3	0	26	1	21	18	0	40	18	8	11	0	37	173
05:15 PM	16	30	7	0	53	10	17	4	0	31	4	21	16	0	41	13	8	9	0	30	155
05:30 PM	12	31	13	0	56	8	5	2	0	15	1	20	15	0	36	20	14	14	0	48	155
05:45 PM	10	13	7	0	30	10	13	3	0	26	1	19	15	0	35	16	12	7	0	35	126
Total	61	112	36	0	209	37	49	12	0	98	7	81	64	0	152	67	42	41	0	150	609
06:00 PM	12	16	10	0	38	7	16	2	0	25	3	28	24	0	55	17	10	4	0	31	149
06:15 PM	12	12	19	0	43	9	10	1	0	20	3	20	20	0	43	15	10	6	0	31	137
06:30 PM	7	10	18	0	35	17	11	1	0	29	2	8	17	0	27	16	11	8	0	35	126
06:45 PM	6	17	10	0	33	12	15	2	0	29	3	13	18	0	34	11	15	12	0	38	134
Total	37	55	57	0	149	45	52	6	0	103	11	69	79	0	159	59	46	30	0	135	546
07:00 PM	6	14	10	0	30	4	9	2	0	15	3	11	24	0	38	14	9	5	0	28	111
07:15 PM	10	15	3	0	28	12	7	2	0	21	1	13	15	0	29	13	6	6	0	25	103
07:30 PM	3	9	6	0	18	6	4	0	0	10	1	10	11	0	22	9	9	4	0	22	72
07:45 PM	9	4	3	0	16	6	3	1	0	10	2	10	13	0	25	11	4	2	0	17	68
Total	28	42	22	0	92	28	23	5	0	56	7	44	63	0	114	47	28	17	0	92	354
08:00 PM	4	10	9	0	23	6	1	1	0	8	1	12	11	0	24	13	4	4	0	21	76
08:15 PM	5	13	7	0	25	5	4	0	0	9	0	8	6	0	14	3	3	5	0	11	59
08:30 PM	4	10	6	0	20	8	4	2	0	14	0	7	10	0	17	6	5	10	0	21	72
08:45 PM	5	14	3	0	22	5	8	0	0	13	1	7	6	0	14	5	2	3	0	10	59
Total	18	47	25	0	90	24	17	3	0	44	2	34	33	0	69	27	14	22	0	63	266
Grand Total	549	1058	477	0	2084	422	566	103	0	1091	127	1025	977	2	2131	961	506	505	1	1973	7279
Apprch %	26.3	50.8	22.9	0		38.7	51.9	9.4	0		6	48.1	45.8	0.1		48.7	25.6	25.6	0.1		
Total %	7.5	14.5	6.6	0	28.6	5.8	7.8	1.4	0	15	1.7	14.1	13.4	0	29.3	13.2	7	6.9	0	27.1	

L2 Data Collection

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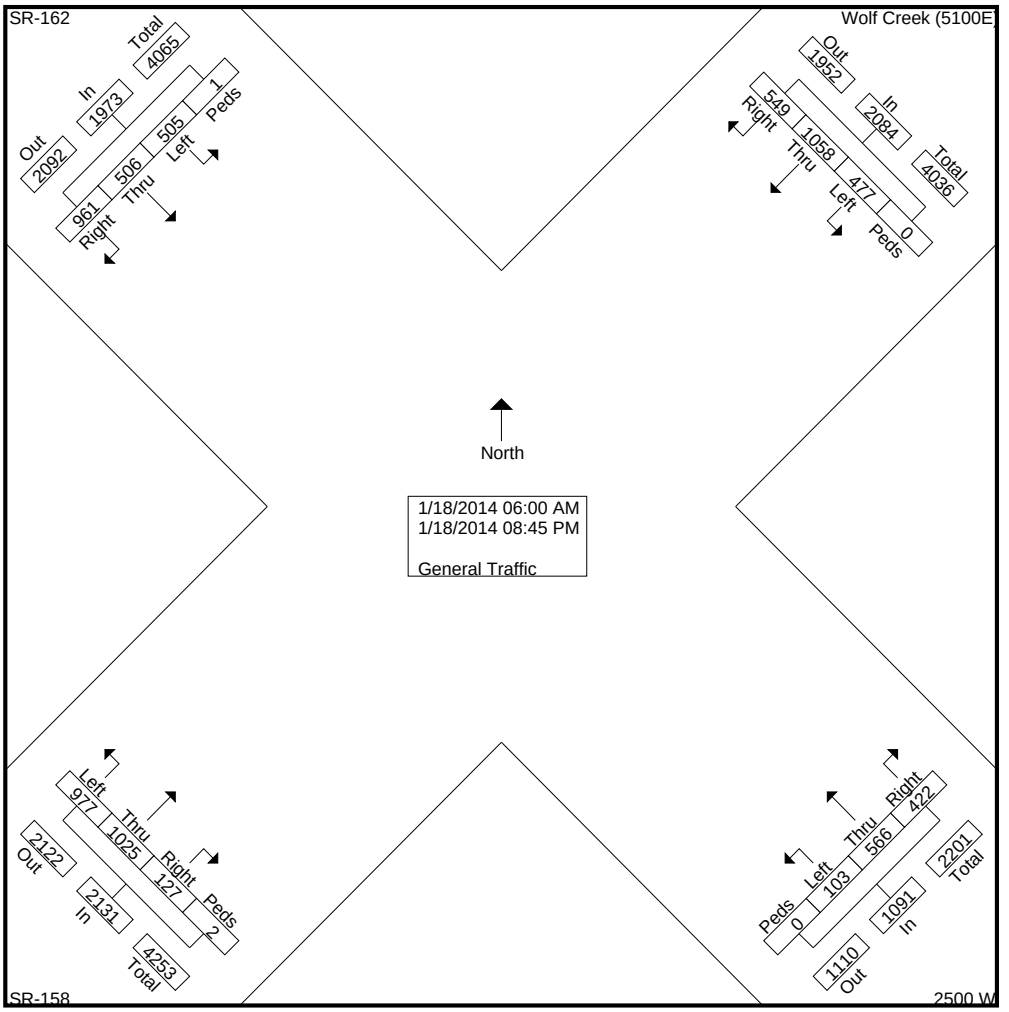
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 3



L2 Data Collection

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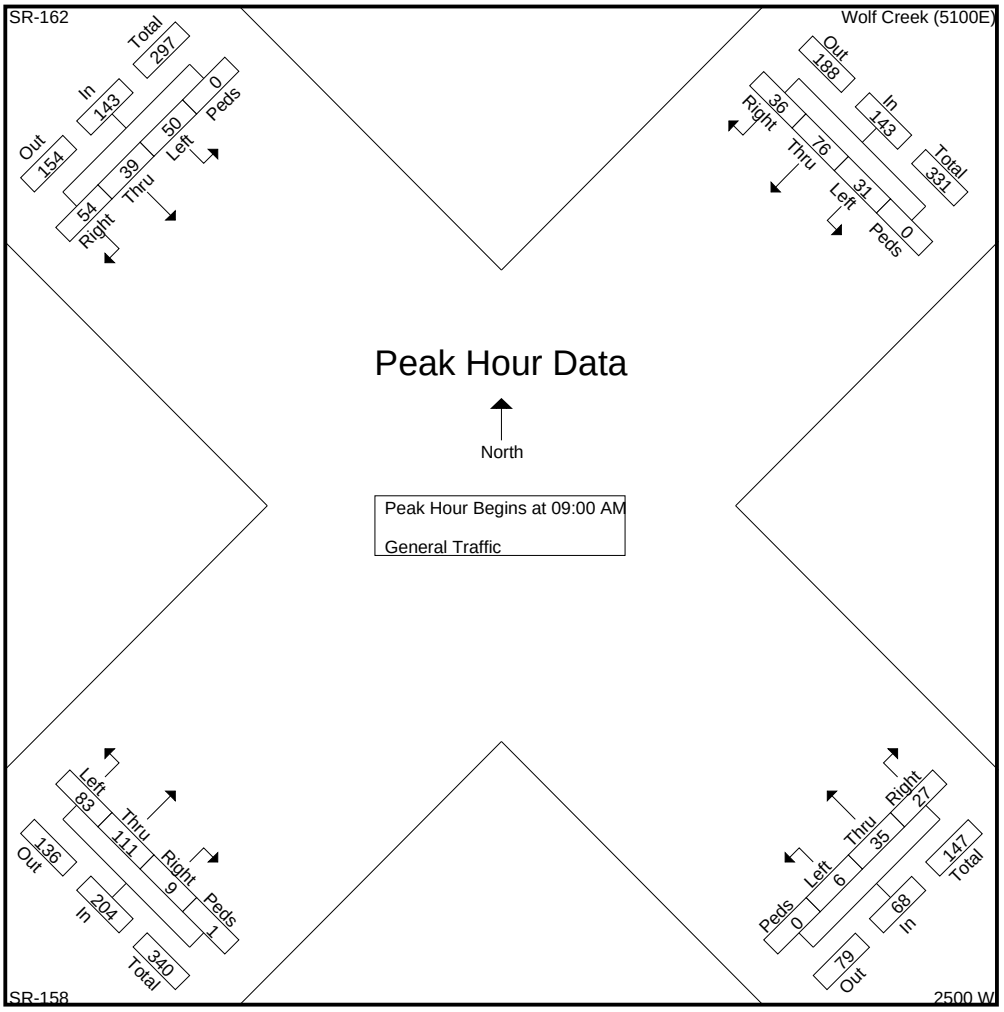
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 4

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	**14**	17	6	0	37	4	7	0	0	11	2	27	**26**	0	55	12	7	12	0	31	134
09:15 AM	10	20	8	0	38	**9**	9	1	0	19	**4**	**31**	14	0	49	**16**	5	10	0	31	137
09:30 AM	6	14	**9**	0	29	8	8	**5**	0	**21**	0	30	26	0	**56**	11	13	12	0	36	142
09:45 AM	6	**25**	8	0	**39**	6	**11**	0	0	17	3	23	17	**1**	44	15	**14**	**16**	0	**45**	**145**
Total Volume	36	76	31	0	143	27	35	6	0	68	9	111	83	1	204	54	39	50	0	143	558
% App. Total	25.2	53.1	21.7	0		39.7	51.5	8.8	0		4.4	54.4	40.7	0.5		37.8	27.3	35	0		
PHF	.643	.760	.861	.000	.917	.750	.795	.300	.000	.810	.563	.895	.798	.250	.911	.844	.696	.781	.000	.794	.962



L2 Data Collection

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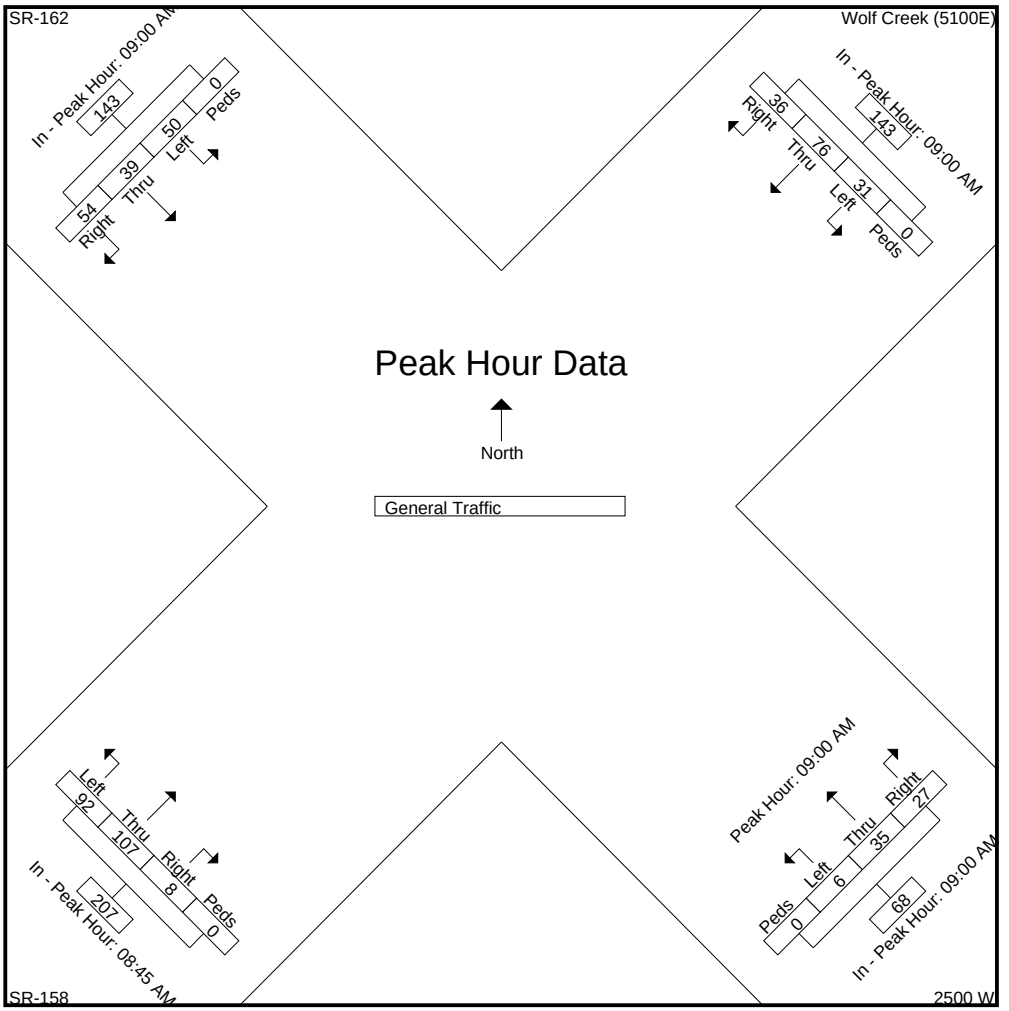
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 5

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	09:00 AM					09:00 AM					08:45 AM					09:00 AM					
+0 mins.	**14**	17	6	0	37	4	7	0	0	11	2	19	**26**	0	47	12	7	12	0	31	
+15 mins.	10	20	8	0	38	**9**	9	1	0	19	2	27	26	0	55	**16**	5	10	0	31	
+30 mins.	6	14	**9**	0	29	8	8	**5**	0	**21**	**4**	**31**	14	0	49	11	13	12	0	36	
+45 mins.	6	**25**	8	0	**39**	6	**11**	0	0	17	0	30	26	0	**56**	15	**14**	**16**	0	**45**	
Total Volume	36	76	31	0	143	27	35	6	0	68	8	107	92	0	207	54	39	50	0	143	
% App. Total	25.2	53.1	21.7	0		39.7	51.5	8.8	0		3.9	51.7	44.4	0		37.8	27.3	35	0		
PHF	.643	.760	.861	.000	.917	.750	.795	.300	.000	.810	.500	.863	.885	.000	.924	.844	.696	.781	.000	.794	



L2 Data Collection

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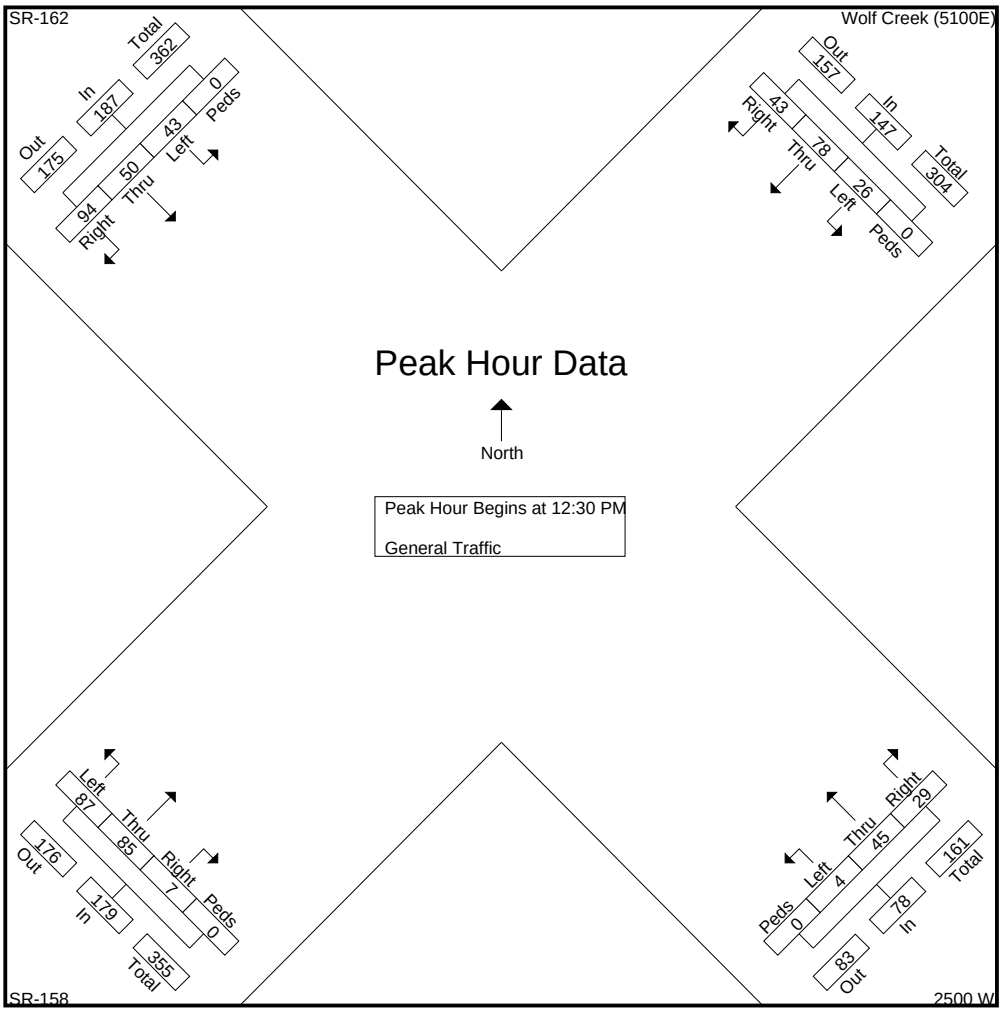
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 6

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	**14**	15	6	0	35	**10**	9	1	0	20	0	20	**26**	0	46	22	9	**14**	0	45	146
12:45 PM	13	19	**8**	0	**40**	5	**15**	0	0	20	1	16	14	0	31	**33**	15	11	0	**59**	**150**
01:00 PM	8	19	5	0	32	7	6	**2**	0	15	**3**	**29**	24	0	**56**	21	**17**	9	0	47	150
01:15 PM	8	**25**	7	0	40	7	15	1	0	**23**	3	20	23	0	46	18	9	9	0	36	145
Total Volume	43	78	26	0	147	29	45	4	0	78	7	85	87	0	179	94	50	43	0	187	591
% App. Total	29.3	53.1	17.7	0		37.2	57.7	5.1	0		3.9	47.5	48.6	0		50.3	26.7	23	0		
PHF	.768	.780	.813	.000	.919	.725	.750	.500	.000	.848	.583	.733	.837	.000	.799	.712	.735	.768	.000	.792	.985



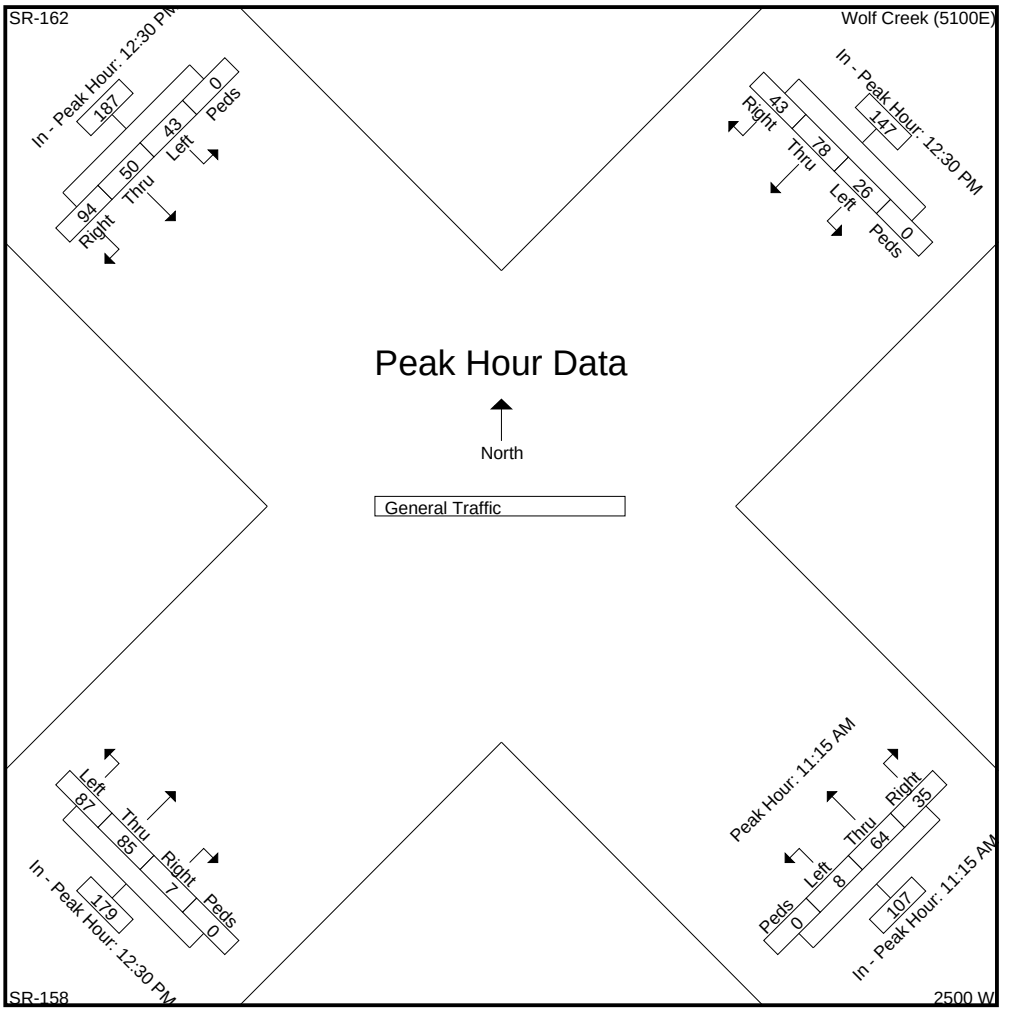
L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 7

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	12:30 PM					11:15 AM					12:30 PM					12:30 PM					
+0 mins.	**14**	15	6	0	35	6	12	**3**	0	21	0	20	**26**	0	46	22	9	**14**	0	45	
+15 mins.	13	19	**8**	0	**40**	**10**	**19**	0	0	29	1	16	14	0	31	**33**	15	11	0	**59**	
+30 mins.	8	19	5	0	32	10	14	2	0	26	**3**	**29**	24	0	**56**	21	**17**	9	0	47	
+45 mins.	8	**25**	7	0	40	9	19	3	0	**31**	3	20	23	0	46	18	9	9	0	36	
Total Volume	43	78	26	0	147	35	64	8	0	107	7	85	87	0	179	94	50	43	0	187	
% App. Total	29.3	53.1	17.7	0		32.7	59.8	7.5	0		3.9	47.5	48.6	0		50.3	26.7	23	0		
PHF	.768	.780	.813	.000	.919	.875	.842	.667	.000	.863	.583	.733	.837	.000	.799	.712	.735	.768	.000	.792	



L2 Data Collection

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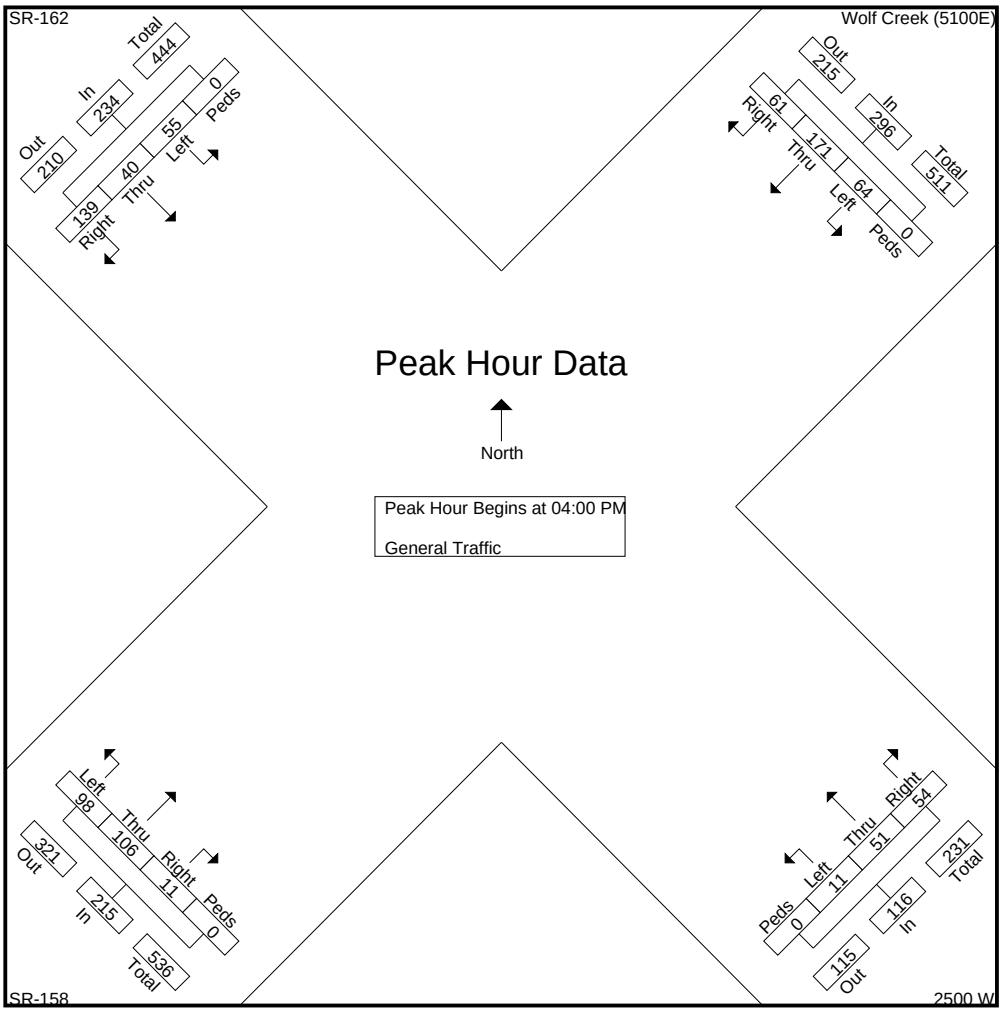
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 8

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	10	33	12	0	55	12	**17**	**7**	0	**36**	**5**	20	25	0	50	34	8	11	0	53	194
04:15 PM	15	47	19	0	81	11	13	1	0	25	2	26	**30**	0	58	26	9	**18**	0	53	217
04:30 PM	14	**57**	12	0	**83**	**18**	11	1	0	30	1	**38**	21	0	**60**	**50**	7	12	0	**69**	**242**
04:45 PM	**22**	34	**21**	0	77	13	10	2	0	25	3	22	22	0	47	29	**16**	14	0	59	208
Total Volume	61	171	64	0	296	54	51	11	0	116	11	106	98	0	215	139	40	55	0	234	861
% App. Total	20.6	57.8	21.6	0		46.6	44	9.5	0		5.1	49.3	45.6	0		59.4	17.1	23.5	0		
PHF	.693	.750	.762	.000	.892	.750	.750	.393	.000	.806	.550	.697	.817	.000	.896	.695	.625	.764	.000	.848	.889



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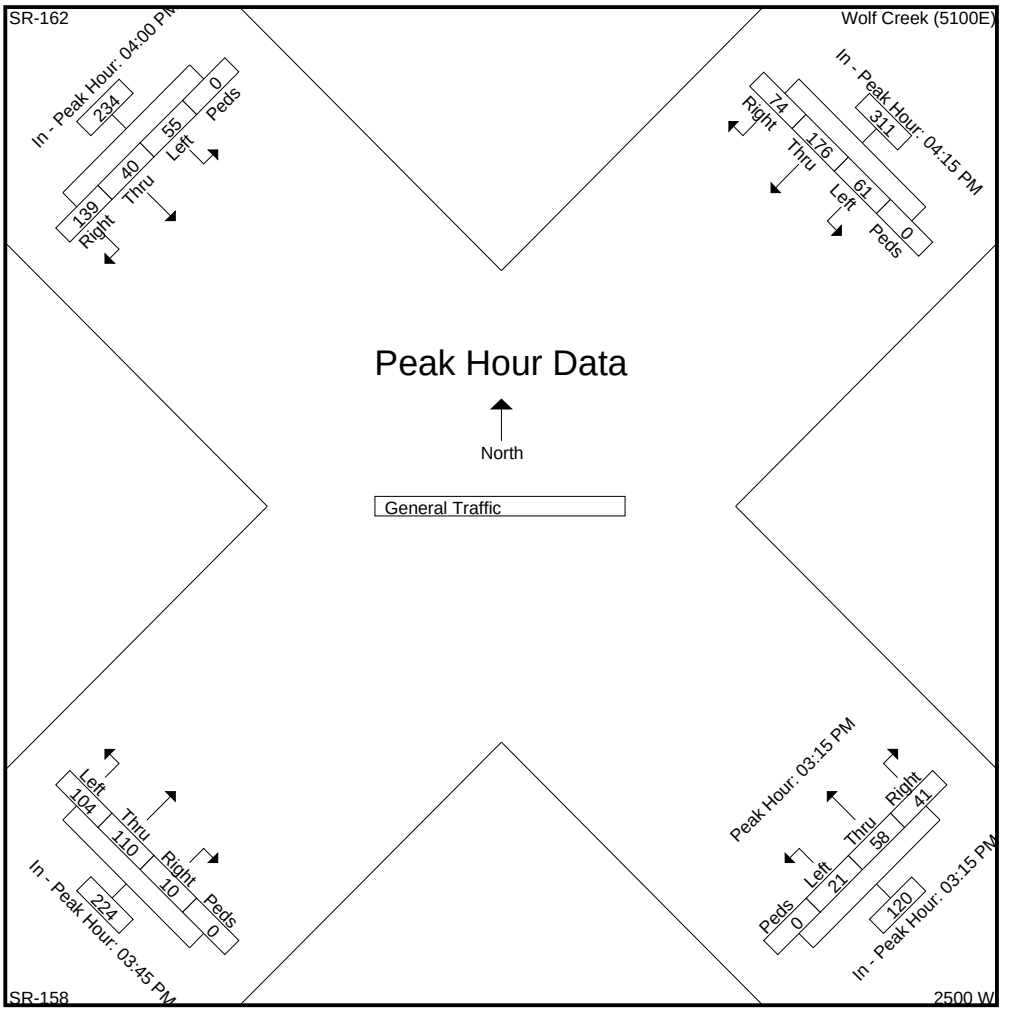
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 9

	Wolf Creek (5100E) From Northeast					2500 W From Southeast					SR-158 From Southwest					SR-162 From Northwest					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:15 PM					03:15 PM					03:45 PM					04:00 PM					
+0 mins.	15	47	19	0	81	9	**20**	3	0	32	2	26	28	0	56	34	8	11	0	53	
+15 mins.	14	**57**	12	0	**83**	**12**	13	4	0	29	**5**	20	25	0	50	26	9	**18**	0	53	
+30 mins.	22	34	**21**	0	77	8	8	**7**	0	23	2	26	**30**	0	58	**50**	7	12	0	**69**	
+45 mins.	**23**	38	9	0	70	12	17	7	0	**36**	1	**38**	21	0	**60**	29	**16**	14	0	59	
Total Volume	74	176	61	0	311	41	58	21	0	120	10	110	104	0	224	139	40	55	0	234	
% App. Total	23.8	56.6	19.6	0		34.2	48.3	17.5	0		4.5	49.1	46.4	0		59.4	17.1	23.5	0		
PHF	.804	.772	.726	.000	.937	.854	.725	.750	.000	.833	.500	.724	.867	.000	.933	.695	.625	.764	.000	.848	



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Study: PEC
Intersection: SR-158 / SR-162
City, State: Eden, Utah
Control: Stop Sign

File Name : SR-158 SR-162 SAT
Site Code :
Start Date : 1/18/2014
Page No : 10

Image 1

L2 Data Collection

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Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 1

Groups Printed- General Traffic

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	25	1	0	26	0	7	0	7	4	6	0	10	43
06:15 AM	29	3	0	32	0	11	0	11	6	6	0	12	55
06:30 AM	45	2	0	47	1	20	0	21	9	11	0	20	88
06:45 AM	34	3	0	37	1	23	0	24	17	15	0	32	93
Total	133	9	0	142	2	61	0	63	36	38	0	74	279
07:00 AM	46	3	0	49	1	22	0	23	17	7	0	24	96
07:15 AM	47	2	0	49	2	37	0	39	17	14	0	31	119
07:30 AM	58	2	0	60	2	32	0	34	12	25	0	37	131
07:45 AM	35	8	0	43	2	18	0	20	26	26	0	52	115
Total	186	15	0	201	7	109	0	116	72	72	0	144	461
08:00 AM	41	7	0	48	2	15	0	17	25	25	0	50	115
08:15 AM	53	7	0	60	2	10	0	12	30	22	0	52	124
08:30 AM	48	6	0	54	3	20	0	23	29	26	0	55	132
08:45 AM	33	4	0	37	4	18	0	22	33	27	0	60	119
Total	175	24	0	199	11	63	0	74	117	100	0	217	490
09:00 AM	33	8	0	41	1	18	0	19	19	22	0	41	101
09:15 AM	33	6	0	39	2	14	0	16	20	26	0	46	101
09:30 AM	33	7	0	40	7	21	0	28	18	29	0	47	115
09:45 AM	27	6	0	33	4	21	0	25	27	21	0	48	106
Total	126	27	0	153	14	74	0	88	84	98	0	182	423
10:00 AM	31	7	0	38	5	12	0	17	18	14	0	32	87
10:15 AM	24	11	0	35	3	17	0	20	15	14	0	29	84
10:30 AM	30	2	0	32	4	23	0	27	18	16	0	34	93
10:45 AM	26	2	0	28	4	17	0	21	17	23	0	40	89
Total	111	22	0	133	16	69	0	85	68	67	0	135	353
11:00 AM	21	4	0	25	0	19	0	19	18	21	0	39	83
11:15 AM	26	5	0	31	1	14	0	15	15	17	0	32	78
11:30 AM	28	2	0	30	1	24	0	25	12	11	0	23	78
11:45 AM	35	3	0	38	0	18	0	18	18	23	0	41	97
Total	110	14	0	124	2	75	0	77	63	72	0	135	336
12:00 PM	28	4	0	32	5	18	0	23	17	23	0	40	95
12:15 PM	24	1	0	25	4	25	0	29	31	18	0	49	103
12:30 PM	35	3	0	38	3	18	0	21	24	25	0	49	108
12:45 PM	31	3	0	34	7	12	0	19	10	33	0	43	96
Total	118	11	0	129	19	73	0	92	82	99	0	181	402
01:00 PM	14	5	0	19	2	18	0	20	16	24	0	40	79
01:15 PM	23	5	0	28	2	15	0	17	17	21	0	38	83
01:30 PM	34	8	0	42	3	27	0	30	16	34	0	50	122
01:45 PM	25	3	0	28	7	37	0	44	15	28	0	43	115
Total	96	21	0	117	14	97	0	111	64	107	0	171	399
02:00 PM	31	5	0	36	4	19	0	23	21	19	0	40	99
02:15 PM	27	5	0	32	3	27	0	30	9	32	0	41	103
02:30 PM	34	2	0	36	5	18	0	23	24	34	0	58	117
02:45 PM	35	3	0	38	5	28	0	33	22	34	0	56	127
Total	127	15	0	142	17	92	0	109	76	119	0	195	446
03:00 PM	32	1	0	33	9	15	0	24	31	48	0	79	136
03:15 PM	22	7	3	32	8	17	0	25	29	32	0	61	118
03:30 PM	32	5	0	37	4	25	0	29	29	53	0	82	148
03:45 PM	35	3	0	38	12	27	0	39	26	54	0	80	157
Total	121	16	3	140	33	84	0	117	115	187	0	302	559

L2 Data Collection

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Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 2

Groups Printed- General Traffic

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	27	3	0	30	12	21	0	33	19	64	0	83	146
04:15 PM	39	1	0	40	11	19	0	30	24	50	0	74	144
04:30 PM	40	6	0	46	14	33	0	47	22	58	0	80	173
04:45 PM	35	1	0	36	10	29	0	39	19	45	0	64	139
Total	141	11	0	152	47	102	0	149	84	217	0	301	602
05:00 PM	40	2	0	42	4	27	0	31	23	57	0	80	153
05:15 PM	40	5	0	45	4	31	0	35	23	52	0	75	155
05:30 PM	40	4	0	44	5	16	0	21	24	62	0	86	151
05:45 PM	27	1	0	28	4	15	0	19	23	37	0	60	107
Total	147	12	0	159	17	89	0	106	93	208	0	301	566
06:00 PM	16	3	0	19	3	13	0	16	34	51	0	85	120
06:15 PM	31	2	0	33	2	11	0	13	19	44	0	63	109
06:30 PM	27	1	0	28	5	15	0	20	26	37	0	63	111
06:45 PM	20	7	0	27	4	9	0	13	21	38	0	59	99
Total	94	13	0	107	14	48	0	62	100	170	0	270	439
07:00 PM	11	2	0	13	3	11	0	14	18	39	0	57	84
07:15 PM	18	2	0	20	1	6	0	7	14	29	0	43	70
07:30 PM	9	1	0	10	3	6	0	9	17	28	0	45	64
07:45 PM	7	1	0	8	4	4	0	8	10	25	0	35	51
Total	45	6	0	51	11	27	0	38	59	121	0	180	269
08:00 PM	12	3	0	15	2	6	0	8	6	23	0	29	52
08:15 PM	6	0	0	6	4	8	0	12	15	30	0	45	63
08:30 PM	6	3	0	9	6	4	0	10	11	25	0	36	55
08:45 PM	16	0	0	16	1	6	0	7	15	27	0	42	65
Total	40	6	0	46	13	24	0	37	47	105	0	152	235
Grand Total	1770	222	3	1995	237	1087	0	1324	1160	1780	0	2940	6259
Apprch %	88.7	11.1	0.2		17.9	82.1	0		39.5	60.5	0		
Total %	28.3	3.5	0	31.9	3.8	17.4	0	21.2	18.5	28.4	0	47	

L2 Data Collection

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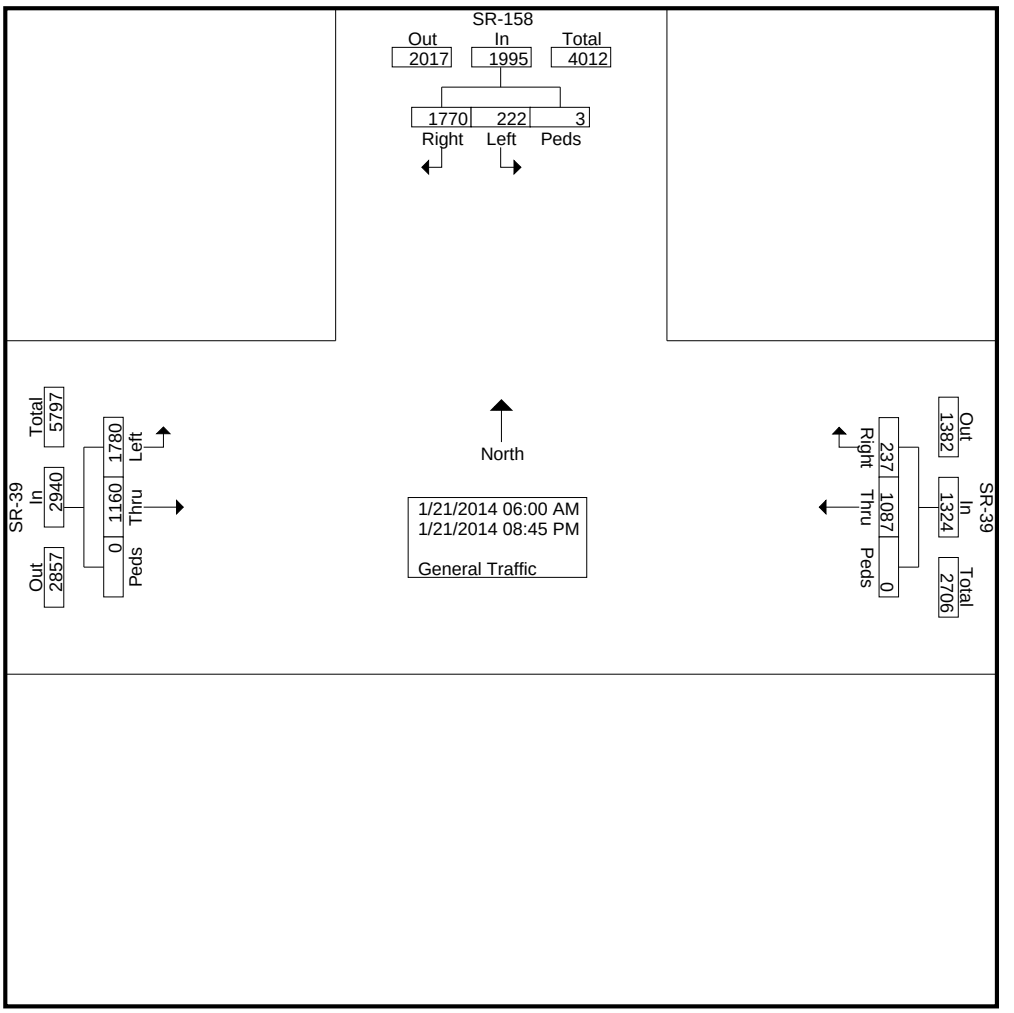
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 3



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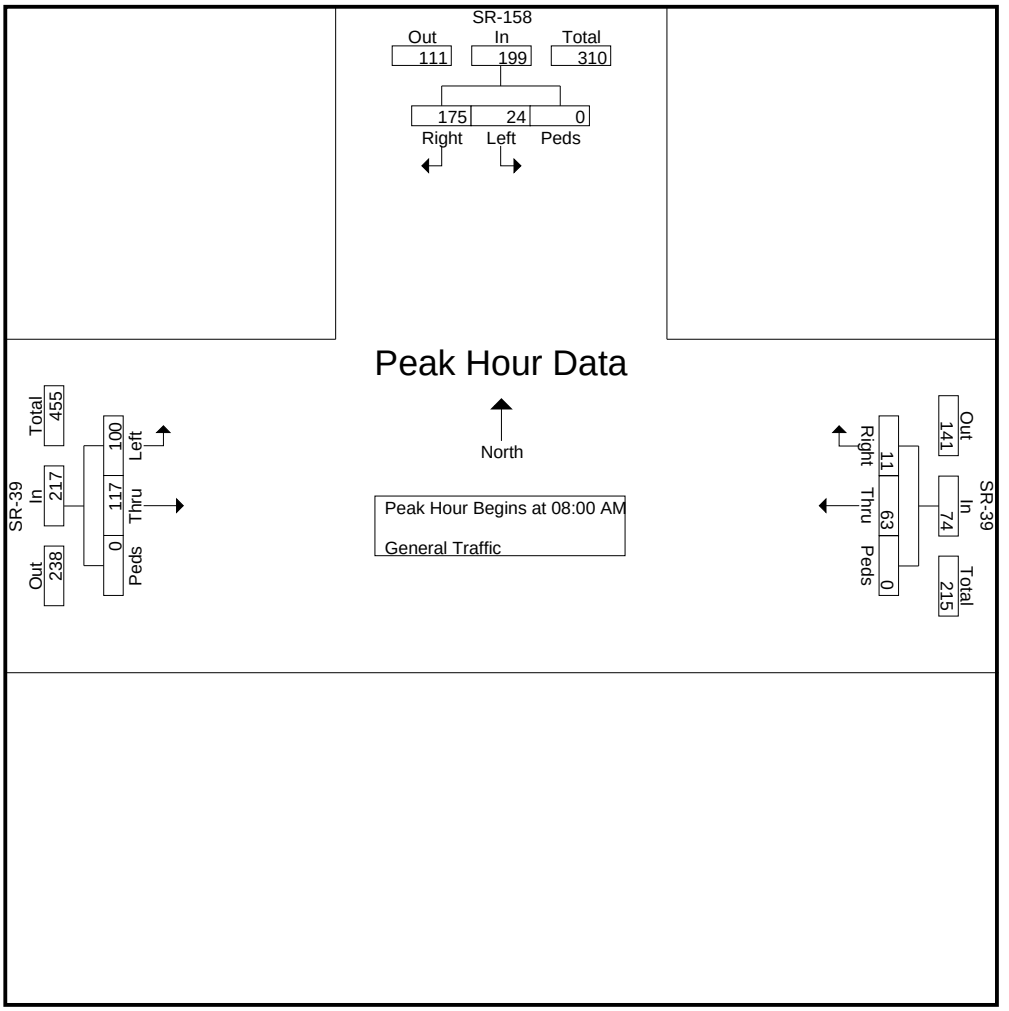
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 4

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	41	**7**	0	48	2	15	0	17	25	25	0	50	115
08:15 AM	**53**	7	0	**60**	2	10	0	12	30	22	0	52	124
08:30 AM	48	6	0	54	3	**20**	0	**23**	29	26	0	55	**132**
08:45 AM	33	4	0	37	**4**	18	0	22	**33**	**27**	0	**60**	119
Total Volume	175	24	0	199	11	63	0	74	117	100	0	217	490
% App. Total	87.9	12.1	0		14.9	85.1	0		53.9	46.1	0		
PHF	.825	.857	.000	.829	.688	.788	.000	.804	.886	.926	.000	.904	.928



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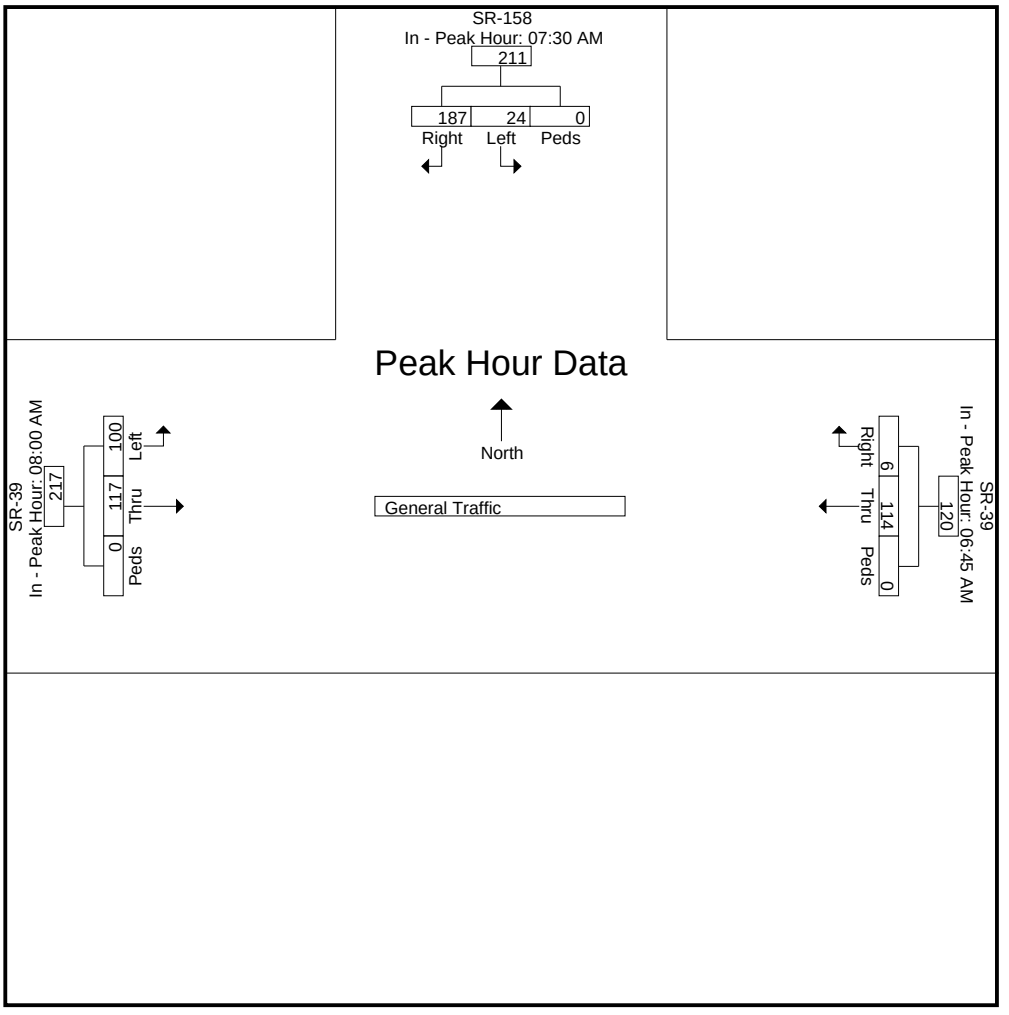
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 5

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:30 AM				06:45 AM				08:00 AM				
+0 mins.	**58**	2	0	**60**	1	23	0	24	25	25	0	50	
+15 mins.	35	**8**	0	43	1	22	0	23	30	22	0	52	
+30 mins.	41	7	0	48	**2**	**37**	0	**39**	29	26	0	55	
+45 mins.	53	7	0	60	2	32	0	34	**33**	**27**	0	**60**	
Total Volume	187	24	0	211	6	114	0	120	117	100	0	217	
% App. Total	88.6	11.4	0		5	95	0		53.9	46.1	0		
PHF	.806	.750	.000	.879	.750	.770	.000	.769	.886	.926	.000	.904	



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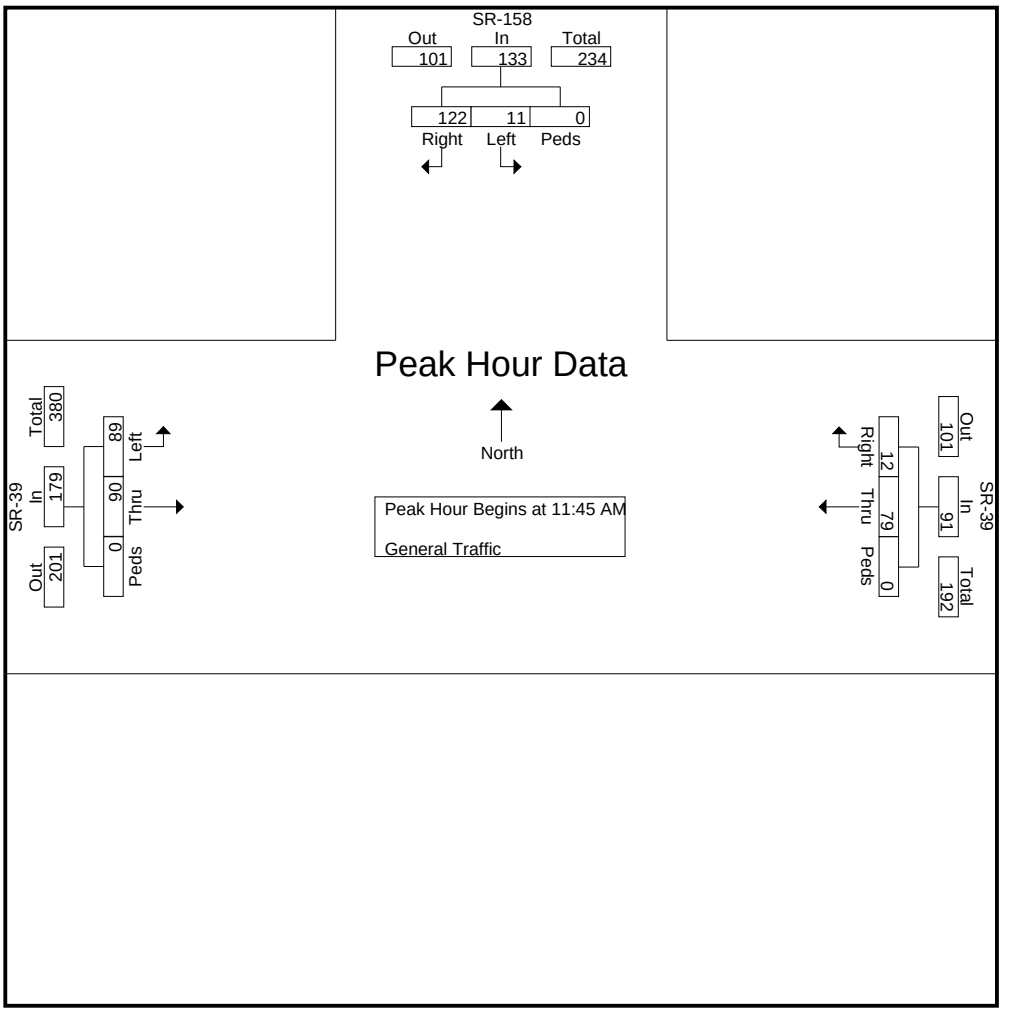
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 6

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	**35**	3	0	**38**	0	18	0	18	18	23	0	41	97
12:00 PM	28	**4**	0	32	**5**	18	0	23	17	23	0	40	95
12:15 PM	24	1	0	25	4	**25**	0	**29**	**31**	18	0	**49**	103
12:30 PM	35	3	0	38	3	18	0	21	24	**25**	0	49	**108**
Total Volume	122	11	0	133	12	79	0	91	90	89	0	179	403
% App. Total	91.7	8.3	0		13.2	86.8	0		50.3	49.7	0		
PHF	.871	.688	.000	.875	.600	.790	.000	.784	.726	.890	.000	.913	.933



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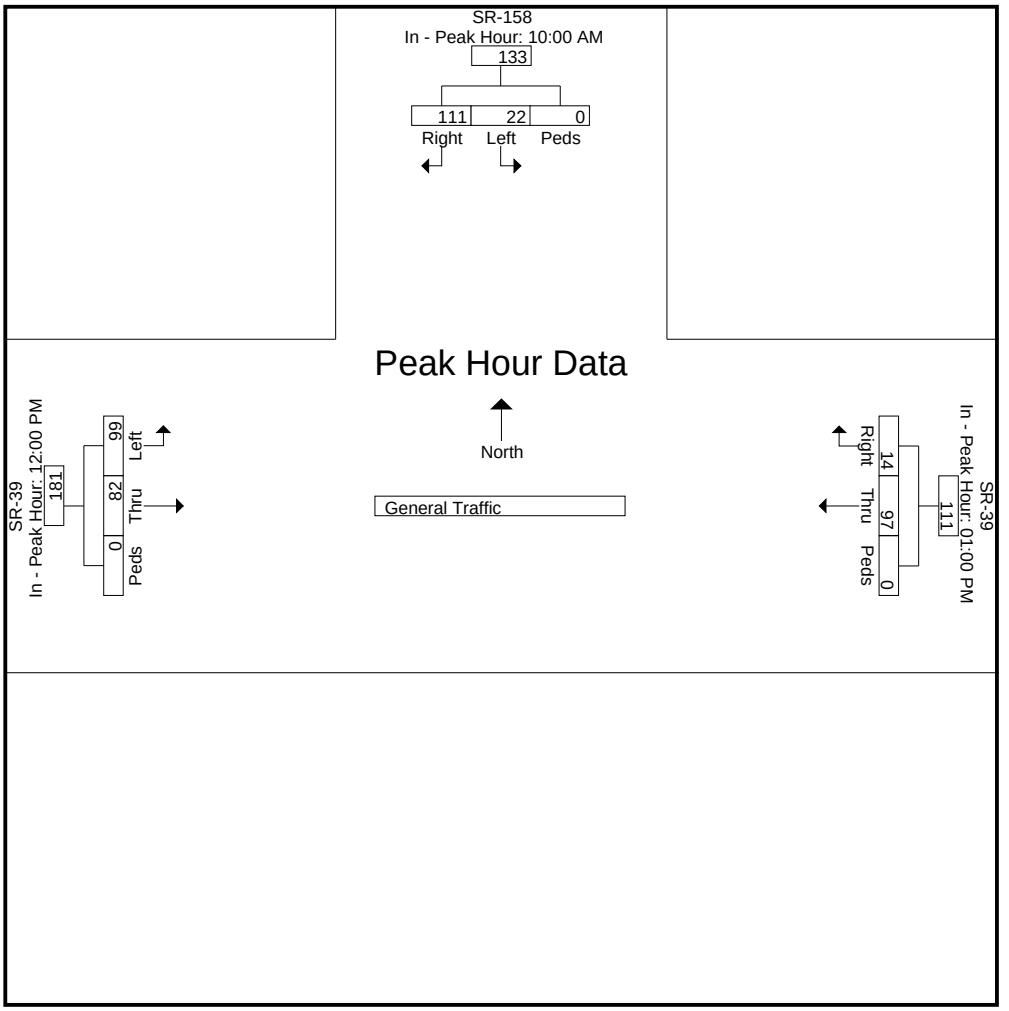
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 7

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	10:00 AM				01:00 PM				12:00 PM				
+0 mins.	**31**	7	0	**38**	2	18	0	20	17	23	0	40	
+15 mins.	24	**11**	0	35	2	15	0	17	**31**	18	0	**49**	
+30 mins.	30	2	0	32	3	27	0	30	24	25	0	49	
+45 mins.	26	2	0	28	**7**	**37**	0	**44**	10	**33**	0	43	
Total Volume	111	22	0	133	14	97	0	111	82	99	0	181	
% App. Total	83.5	16.5	0		12.6	87.4	0		45.3	54.7	0		
PHF	.895	.500	.000	.875	.500	.655	.000	.631	.661	.750	.000	.923	



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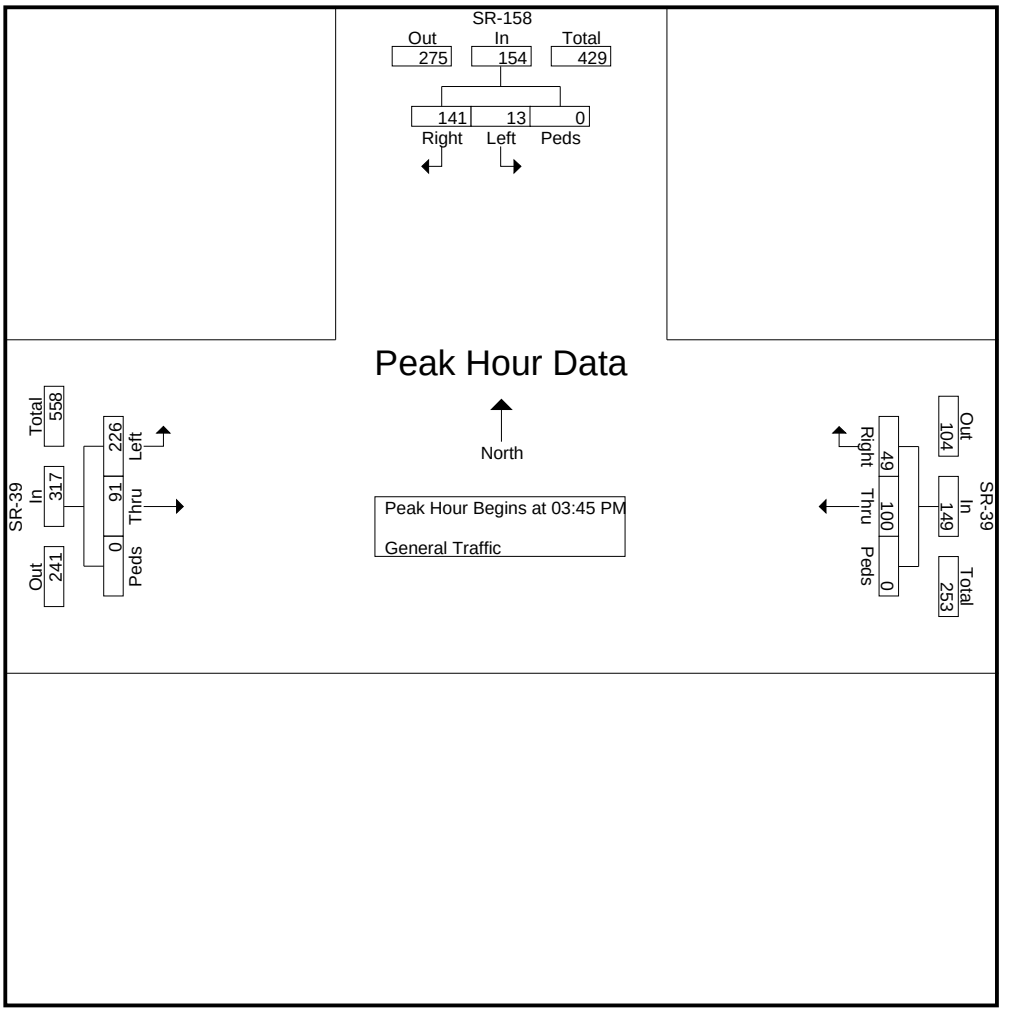
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 8

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:45 PM													
03:45 PM	35	3	0	38	12	27	0	39	**26**	54	0	80	157
04:00 PM	27	3	0	30	12	21	0	33	19	**64**	0	**83**	146
04:15 PM	39	1	0	40	11	19	0	30	24	50	0	74	144
04:30 PM	**40**	**6**	0	**46**	**14**	**33**	0	**47**	22	58	0	80	**173**
Total Volume	141	13	0	154	49	100	0	149	91	226	0	317	620
% App. Total	91.6	8.4	0		32.9	67.1	0		28.7	71.3	0		
PHF	.881	.542	.000	.837	.875	.758	.000	.793	.875	.883	.000	.955	.896



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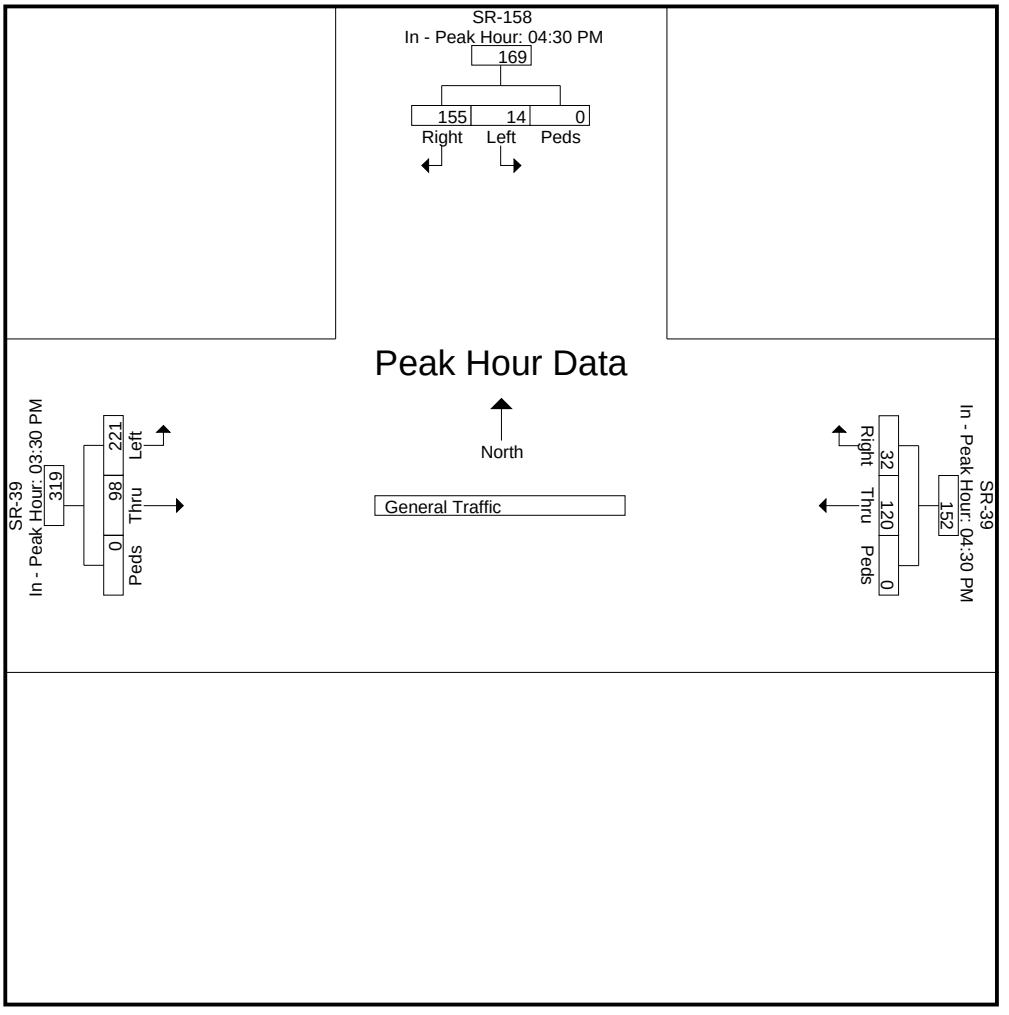
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014
Page No : 9

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:30 PM				04:30 PM				03:30 PM				
+0 mins.	**40**	**6**	0	**46**	**14**	**33**	0	**47**	**29**	53	0	82	
+15 mins.	35	1	0	36	10	29	0	39	26	54	0	80	
+30 mins.	40	2	0	42	4	27	0	31	19	**64**	0	**83**	
+45 mins.	40	5	0	45	4	31	0	35	24	50	0	74	
Total Volume	155	14	0	169	32	120	0	152	98	221	0	319	
% App. Total	91.7	8.3	0		21.1	78.9	0		30.7	69.3	0		
PHF	.969	.583	.000	.918	.571	.909	.000	.809	.845	.863	.000	.961	



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Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39
Site Code :
Start Date : 1/21/2014

Image 1

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Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 1

Groups Printed- General Traffic

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	6	0	0	6	0	1	0	1	2	5	0	7	14
06:15 AM	6	0	0	6	1	3	0	4	3	6	0	9	19
06:30 AM	7	2	0	9	0	7	0	7	11	10	0	21	37
06:45 AM	9	4	0	13	0	2	0	2	14	10	0	24	39
Total	28	6	0	34	1	13	0	14	30	31	0	61	109
07:00 AM	13	1	0	14	1	3	0	4	15	8	0	23	41
07:15 AM	5	5	0	10	3	9	0	12	16	10	0	26	48
07:30 AM	13	1	0	14	4	7	0	11	25	18	0	43	68
07:45 AM	10	4	0	14	7	7	0	14	32	28	0	60	88
Total	41	11	0	52	15	26	0	41	88	64	0	152	245
08:00 AM	19	5	0	24	2	8	0	10	40	26	0	66	100
08:15 AM	27	7	0	34	5	15	0	20	35	41	0	76	130
08:30 AM	18	4	0	22	6	10	0	16	34	36	0	70	108
08:45 AM	16	13	0	29	10	10	0	20	42	44	0	86	135
Total	80	29	0	109	23	43	0	66	151	147	0	298	473
09:00 AM	29	9	0	38	16	11	0	27	39	30	0	69	134
09:15 AM	30	13	0	43	10	11	0	21	31	39	0	70	134
09:30 AM	26	8	0	34	7	19	0	26	21	49	0	70	130
09:45 AM	32	12	0	44	14	20	0	34	27	28	0	55	133
Total	117	42	0	159	47	61	0	108	118	146	0	264	531
10:00 AM	23	6	0	29	10	19	0	29	37	42	0	79	137
10:15 AM	32	6	0	38	8	19	0	27	28	23	0	51	116
10:30 AM	40	11	0	51	8	12	0	20	35	29	0	64	135
10:45 AM	32	2	0	34	6	23	0	29	28	24	0	52	115
Total	127	25	0	152	32	73	0	105	128	118	0	246	503
11:00 AM	37	6	0	43	11	18	0	29	27	34	0	61	133
11:15 AM	34	3	0	37	12	25	0	37	47	27	0	74	148
11:30 AM	45	5	0	50	4	32	0	36	27	30	0	57	143
11:45 AM	37	5	0	42	8	23	0	31	24	23	0	47	120
Total	153	19	0	172	35	98	0	133	125	114	0	239	544
12:00 PM	32	4	0	36	9	20	0	29	32	33	0	65	130
12:15 PM	36	7	0	43	4	28	0	32	39	50	0	89	164
12:30 PM	41	7	0	48	8	23	0	31	37	29	0	66	145
12:45 PM	37	5	0	42	6	32	0	38	31	51	0	82	162
Total	146	23	0	169	27	103	0	130	139	163	0	302	601
01:00 PM	36	16	0	52	10	25	0	35	37	48	0	85	172
01:15 PM	39	7	0	46	6	25	0	31	28	30	0	58	135
01:30 PM	40	5	0	45	8	44	0	52	41	28	0	69	166
01:45 PM	49	5	0	54	10	44	0	54	26	37	0	63	171
Total	164	33	0	197	34	138	0	172	132	143	0	275	644
02:00 PM	31	8	0	39	7	39	0	46	26	27	0	53	138
02:15 PM	38	14	0	52	3	39	0	42	22	38	0	60	154
02:30 PM	46	8	0	54	6	43	0	49	31	33	0	64	167
02:45 PM	32	5	0	37	13	36	0	49	22	46	0	68	154
Total	147	35	0	182	29	157	0	186	101	144	0	245	613
03:00 PM	57	12	0	69	14	37	0	51	36	47	0	83	203
03:15 PM	65	9	0	74	12	53	0	65	40	56	0	96	235
03:30 PM	31	4	0	35	1	38	0	39	6	28	0	34	108
03:45 PM	37	11	0	48	14	63	0	77	17	42	0	59	184
Total	190	36	0	226	41	191	0	232	99	173	0	272	730

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Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014

Groups Printed- General Traffic

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	55	15	0	70	9	55	0	64	24	51	0	75	209
04:15 PM	58	6	0	64	8	56	0	64	22	44	0	66	194
04:30 PM	64	9	0	73	14	70	0	84	18	45	0	63	220
04:45 PM	83	20	0	103	10	53	0	63	35	39	0	74	240
Total	260	50	0	310	41	234	0	275	99	179	0	278	863
05:00 PM	65	8	0	73	8	58	0	66	16	33	0	49	188
05:15 PM	48	8	0	56	8	49	0	57	32	30	0	62	175
05:30 PM	54	8	0	62	11	42	0	53	27	32	0	59	174
05:45 PM	35	6	0	41	5	29	0	34	16	30	0	46	121
Total	202	30	0	232	32	178	0	210	91	125	0	216	658
06:00 PM	34	4	0	38	17	29	0	46	14	35	0	49	133
06:15 PM	35	4	0	39	6	35	0	41	17	30	0	47	127
06:30 PM	32	4	0	36	7	18	0	25	23	39	0	62	123
06:45 PM	30	0	0	30	5	14	0	19	16	22	0	38	87
Total	131	12	0	143	35	96	0	131	70	126	0	196	470
07:00 PM	29	4	0	33	0	17	0	17	19	32	0	51	101
07:15 PM	21	5	0	26	4	14	0	18	13	19	0	32	76
07:30 PM	19	2	0	21	6	13	0	19	15	22	0	37	77
07:45 PM	17	2	0	19	0	7	0	7	19	29	0	48	74
Total	86	13	0	99	10	51	0	61	66	102	0	168	328
08:00 PM	19	4	0	23	0	10	0	10	11	15	0	26	59
08:15 PM	18	3	0	21	1	4	0	5	14	17	0	31	57
08:30 PM	13	4	0	17	1	4	0	5	14	20	0	34	56
08:45 PM	23	2	0	25	2	7	0	9	8	21	0	29	63
Total	73	13	0	86	4	25	0	29	47	73	0	120	235
Grand Total	1945	377	0	2322	406	1487	0	1893	1484	1848	0	3332	7547
Apprch %	83.8	16.2	0		21.4	78.6	0		44.5	55.5	0		
Total %	25.8	5	0	30.8	5.4	19.7	0	25.1	19.7	24.5	0	44.1	

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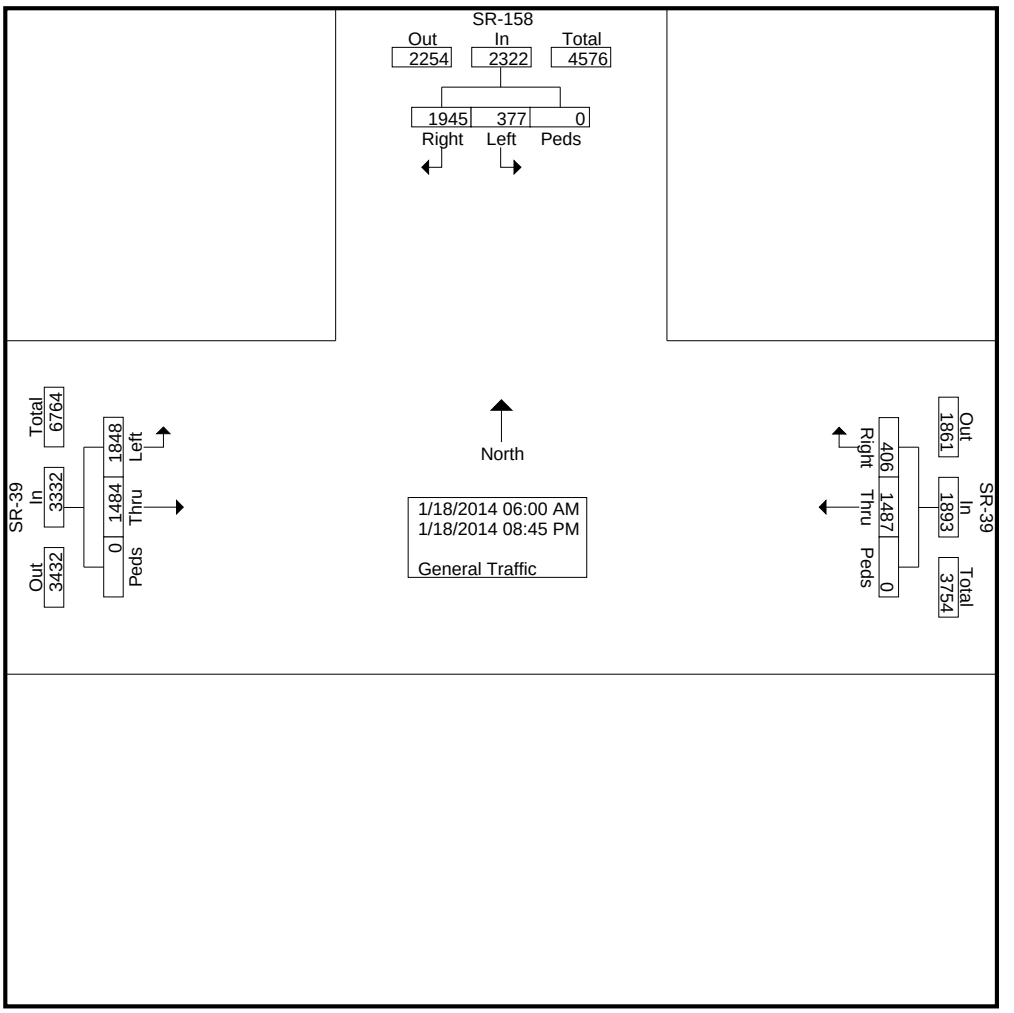
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 3



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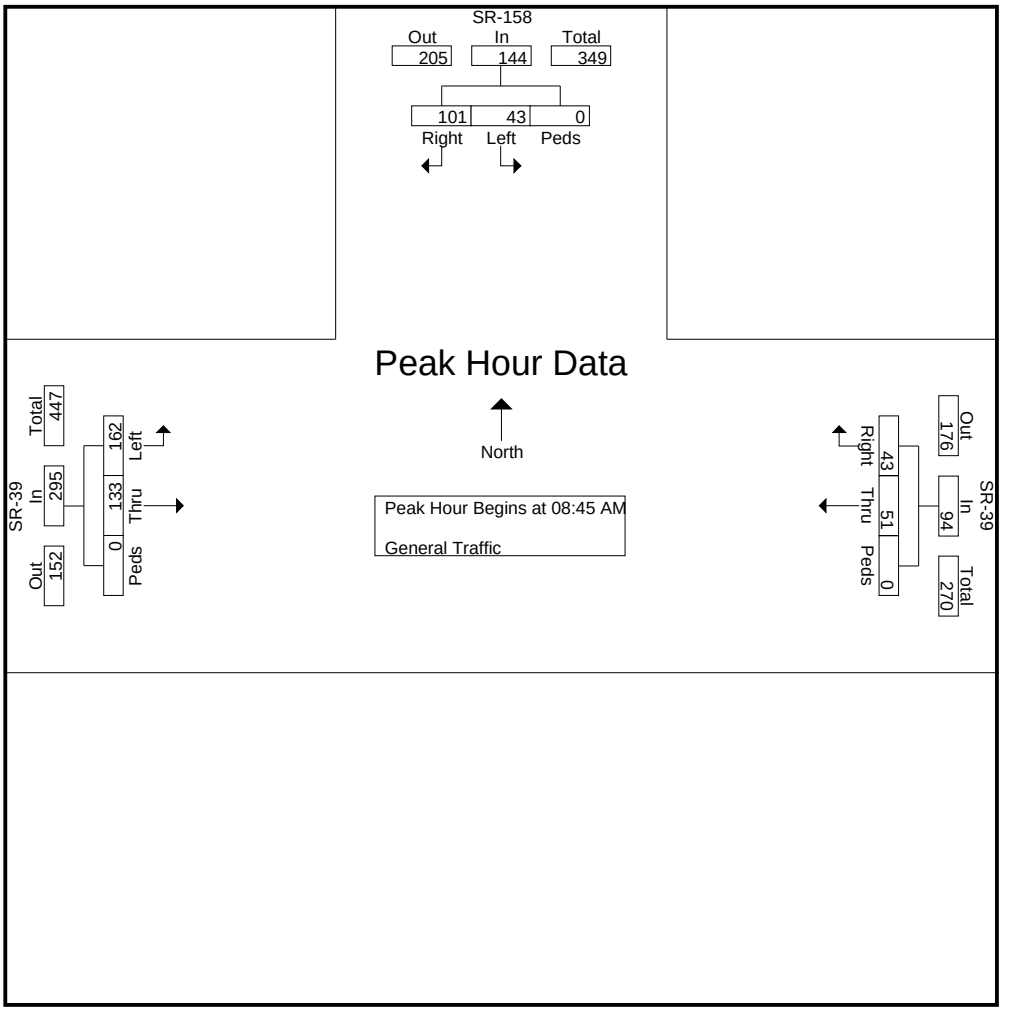
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 4

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:45 AM													
08:45 AM	16	**13**	0	29	10	10	0	20	**42**	44	0	**86**	**135**
09:00 AM	29	9	0	38	**16**	11	0	**27**	39	30	0	69	134
09:15 AM	**30**	13	0	**43**	10	11	0	21	31	39	0	70	134
09:30 AM	26	8	0	34	7	**19**	0	26	21	**49**	0	70	130
Total Volume	101	43	0	144	43	51	0	94	133	162	0	295	533
% App. Total	70.1	29.9	0		45.7	54.3	0		45.1	54.9	0		
PHF	.842	.827	.000	.837	.672	.671	.000	.870	.792	.827	.000	.858	.987



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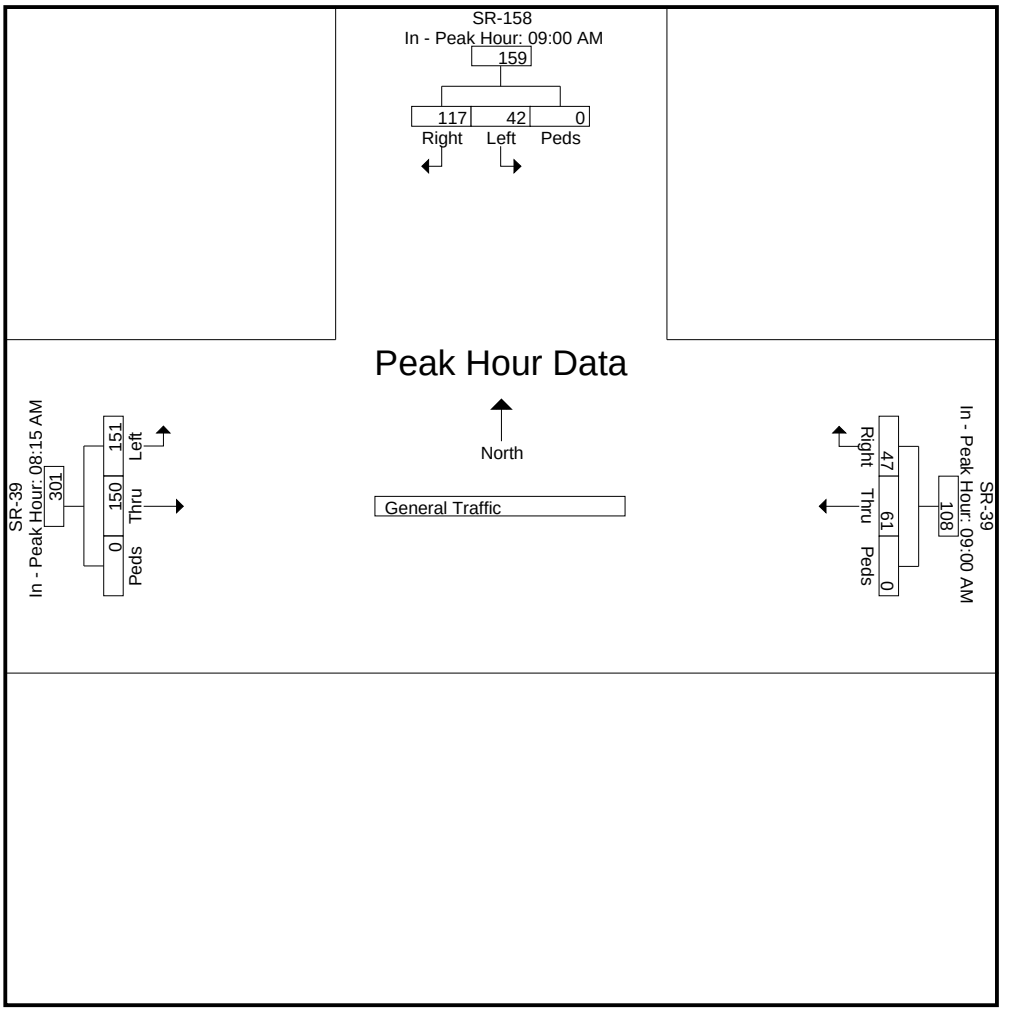
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 5

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	09:00 AM				09:00 AM				08:15 AM				
+0 mins.	29	9	0	38	**16**	11	0	27	35	41	0	76	
+15 mins.	30	**13**	0	43	10	11	0	21	34	36	0	70	
+30 mins.	26	8	0	34	7	19	0	26	**42**	**44**	0	**86**	
+45 mins.	**32**	12	0	**44**	14	**20**	0	**34**	39	30	0	69	
Total Volume	117	42	0	159	47	61	0	108	150	151	0	301	
% App. Total	73.6	26.4	0		43.5	56.5	0		49.8	50.2	0		
PHF	.914	.808	.000	.903	.734	.763	.000	.794	.893	.858	.000	.875	



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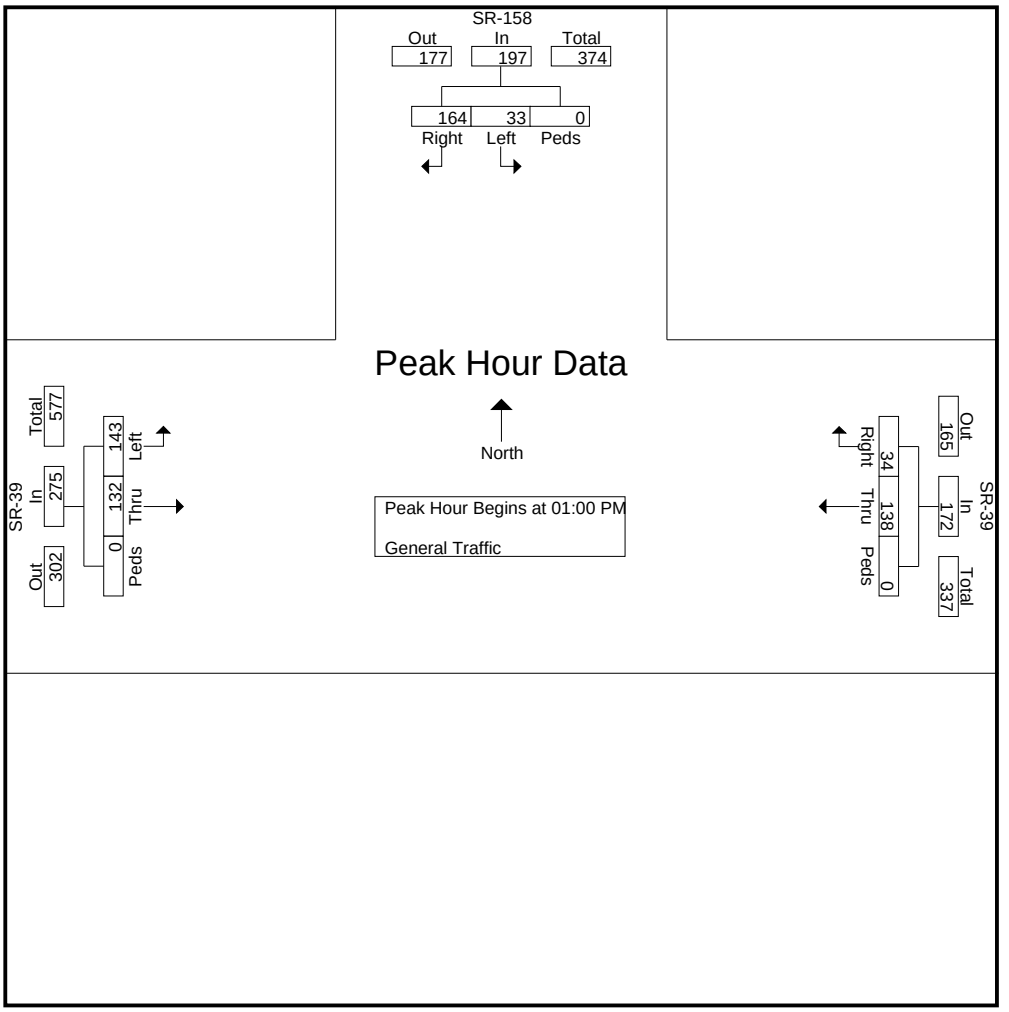
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 6

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	36	**16**	0	52	**10**	25	0	35	37	**48**	0	**85**	**172**
01:15 PM	39	7	0	46	6	25	0	31	28	30	0	58	135
01:30 PM	40	5	0	45	8	**44**	0	52	**41**	28	0	69	166
01:45 PM	**49**	5	0	**54**	10	44	0	**54**	26	37	0	63	171
Total Volume	164	33	0	197	34	138	0	172	132	143	0	275	644
% App. Total	83.2	16.8	0		19.8	80.2	0		48	52	0		
PHF	.837	.516	.000	.912	.850	.784	.000	.796	.805	.745	.000	.809	.936



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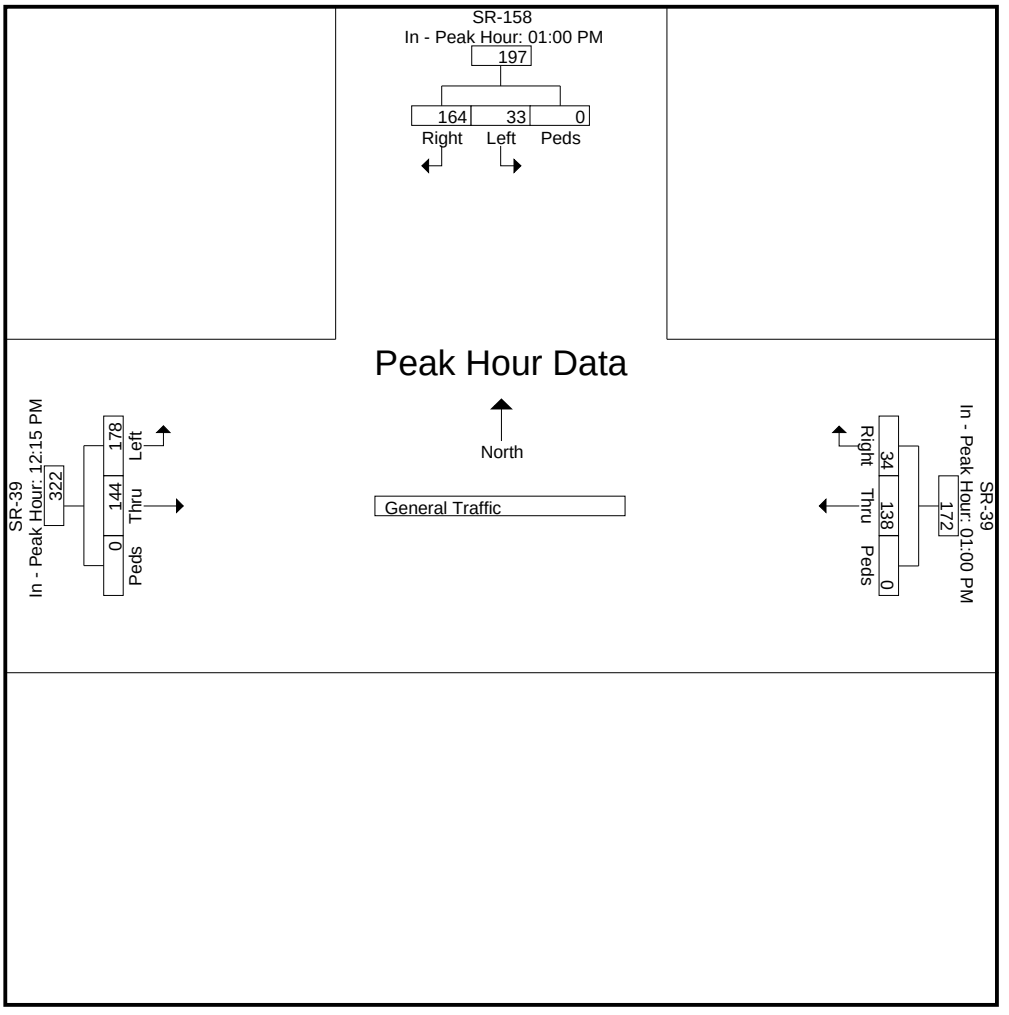
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 7

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	01:00 PM				01:00 PM				12:15 PM				
+0 mins.	36	**16**	0	52	**10**	25	0	35	**39**	50	0	**89**	
+15 mins.	39	7	0	46	6	25	0	31	37	29	0	66	
+30 mins.	40	5	0	45	8	**44**	0	52	31	**51**	0	82	
+45 mins.	**49**	5	0	**54**	10	44	0	**54**	37	48	0	85	
Total Volume	164	33	0	197	34	138	0	172	144	178	0	322	
% App. Total	83.2	16.8	0		19.8	80.2	0		44.7	55.3	0		
PHF	.837	.516	.000	.912	.850	.784	.000	.796	.923	.873	.000	.904	



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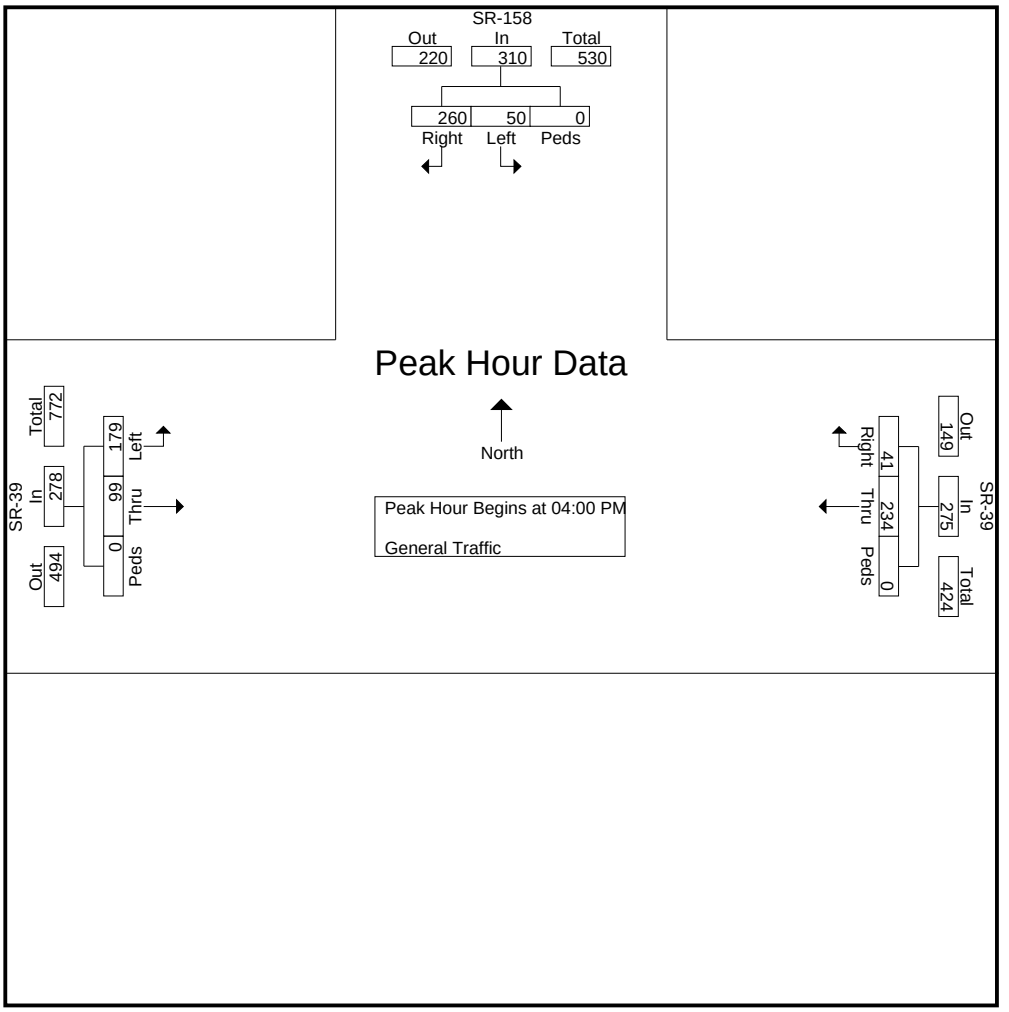
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 8

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	55	15	0	70	9	55	0	64	24	**51**	0	**75**	209
04:15 PM	58	6	0	64	8	56	0	64	22	44	0	66	194
04:30 PM	64	9	0	73	**14**	**70**	0	**84**	18	45	0	63	220
04:45 PM	**83**	**20**	0	**103**	10	53	0	63	**35**	39	0	74	**240**
Total Volume	260	50	0	310	41	234	0	275	99	179	0	278	863
% App. Total	83.9	16.1	0		14.9	85.1	0		35.6	64.4	0		
PHF	.783	.625	.000	.752	.732	.836	.000	.818	.707	.877	.000	.927	.899



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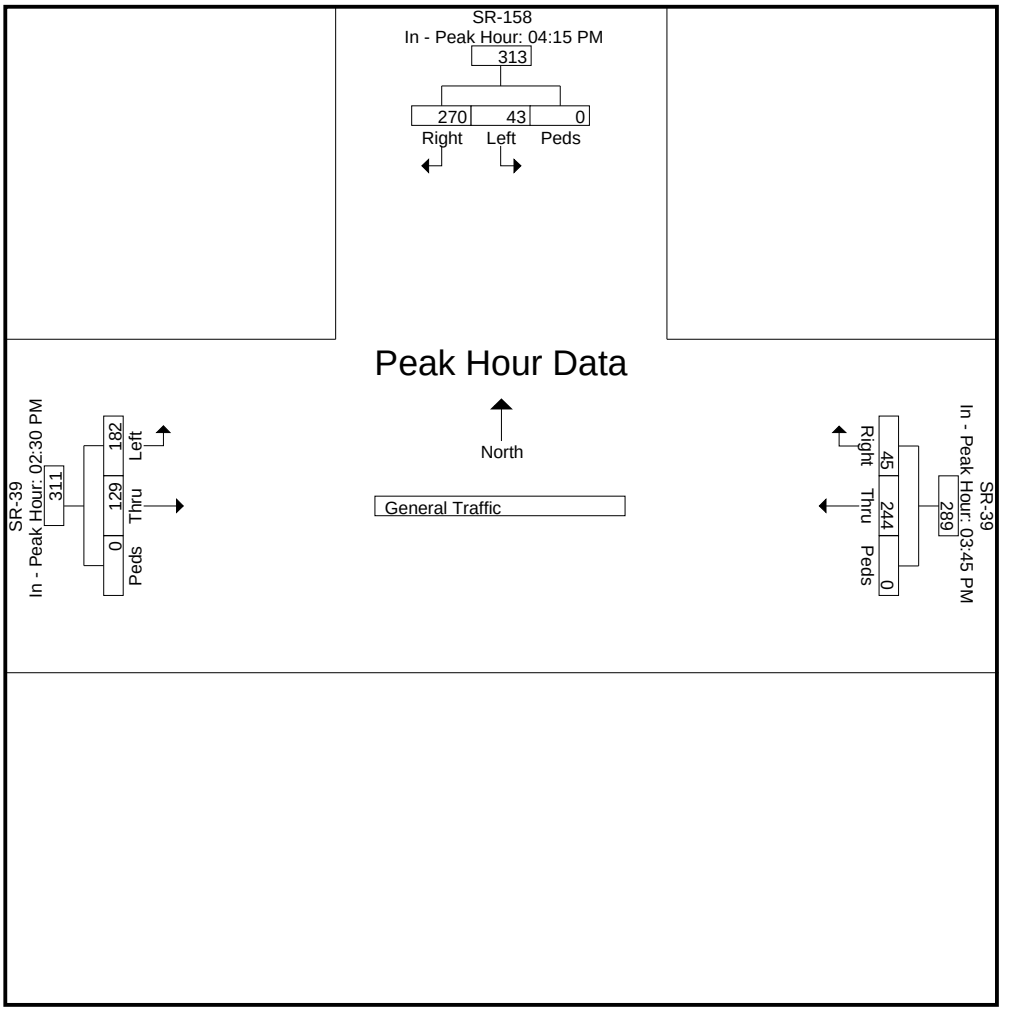
Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014
Page No : 9

	SR-158 From North				SR-39 From East				SR-39 From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:15 PM				03:45 PM				02:30 PM				
+0 mins.	58	6	0	64	**14**	63	0	77	31	33	0	64	
+15 mins.	64	9	0	73	9	55	0	64	22	46	0	68	
+30 mins.	**83**	**20**	0	**103**	8	56	0	64	36	47	0	83	
+45 mins.	65	8	0	73	14	**70**	0	**84**	**40**	**56**	0	**96**	
Total Volume	270	43	0	313	45	244	0	289	129	182	0	311	
% App. Total	86.3	13.7	0		15.6	84.4	0		41.5	58.5	0		
PHF	.813	.538	.000	.760	.804	.871	.000	.860	.806	.813	.000	.810	



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Study: PEC0003
Intersection: SR-158 / SR-39
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-158 SR-39 SAT
Site Code :
Start Date : 1/18/2014

Image 1

L2 Data Collection

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Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 1

Groups Printed- General Traffic

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:00 AM	19	15	0	34	3	1	0	4	1	5	0	6	44
06:15 AM	30	13	0	43	8	1	0	9	4	10	0	14	66
06:30 AM	33	23	0	56	8	1	0	9	2	12	0	14	79
06:45 AM	31	30	0	61	10	1	0	11	5	14	0	19	91
Total	113	81	0	194	29	4	0	33	12	41	0	53	280
07:00 AM	40	28	0	68	12	2	0	14	8	19	0	27	109
07:15 AM	53	39	0	92	8	0	0	8	3	19	0	22	122
07:30 AM	52	38	0	90	7	2	0	9	5	31	0	36	135
07:45 AM	45	54	0	99	20	3	0	23	7	33	0	40	162
Total	190	159	0	349	47	7	0	54	23	102	0	125	528
08:00 AM	34	33	0	67	16	1	0	17	3	34	0	37	121
08:15 AM	43	38	0	81	17	1	0	18	3	55	0	58	157
08:30 AM	33	38	0	71	9	1	0	10	4	46	0	50	131
08:45 AM	34	34	0	68	12	0	0	12	3	47	0	50	130
Total	144	143	0	287	54	3	0	57	13	182	0	195	539
09:00 AM	29	24	0	53	16	2	0	18	2	34	0	36	107
09:15 AM	21	23	0	44	18	2	0	20	6	41	0	47	111
09:30 AM	32	18	0	50	7	3	0	10	6	35	0	41	101
09:45 AM	34	25	0	59	8	4	0	12	4	28	0	32	103
Total	116	90	0	206	49	11	0	60	18	138	0	156	422
10:00 AM	18	17	0	35	12	0	0	12	8	36	0	44	91
10:15 AM	38	16	0	54	8	4	0	12	5	27	0	32	98
10:30 AM	28	20	0	48	15	2	0	17	7	20	0	27	92
10:45 AM	43	26	0	69	8	3	0	11	4	21	0	25	105
Total	127	79	0	206	43	9	0	52	24	104	0	128	386
11:00 AM	40	12	0	52	14	2	0	16	5	29	0	34	102
11:15 AM	28	19	0	47	9	3	0	12	13	24	0	37	96
11:30 AM	19	12	0	31	14	3	0	17	6	40	0	46	94
11:45 AM	34	26	0	60	9	8	0	17	14	42	0	56	133
Total	121	69	0	190	46	16	0	62	38	135	0	173	425
12:00 PM	27	14	0	41	12	5	0	17	10	28	0	38	96
12:15 PM	41	13	0	54	16	11	1	28	21	38	0	59	141
12:30 PM	31	15	0	46	12	6	0	18	4	26	0	30	94
12:45 PM	31	16	0	47	16	9	0	25	9	37	0	46	118
Total	130	58	0	188	56	31	1	88	44	129	0	173	449
01:00 PM	24	19	0	43	19	7	0	26	8	28	0	36	105
01:15 PM	31	19	0	50	22	5	0	27	5	24	0	29	106
01:30 PM	31	26	0	57	13	5	0	18	3	43	0	46	121
01:45 PM	39	12	0	51	19	9	0	28	6	24	0	30	109
Total	125	76	0	201	73	26	0	99	22	119	0	141	441
02:00 PM	44	20	0	64	17	6	0	23	8	28	0	36	123
02:15 PM	35	32	0	67	14	11	0	25	6	28	0	34	126
02:30 PM	38	25	0	63	14	4	0	18	8	34	1	43	124
02:45 PM	51	22	0	73	16	12	0	28	7	45	0	52	153
Total	168	99	0	267	61	33	0	94	29	135	1	165	526
03:00 PM	29	18	0	47	20	8	0	28	6	50	0	56	131
03:15 PM	41	23	0	64	35	9	0	44	8	50	0	58	166
03:30 PM	39	23	0	62	23	7	0	30	9	52	0	61	153
03:45 PM	37	23	0	60	27	9	0	36	9	53	0	62	158
Total	146	87	0	233	105	33	0	138	32	205	0	237	608

L2 Data Collection

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Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 2

Groups Printed- General Traffic

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	21	3	0	24	35	9	0	44	5	49	0	54	122
04:15 PM	31	3	0	34	34	4	0	38	16	47	0	63	135
04:30 PM	62	7	1	70	31	13	0	44	14	66	0	80	194
04:45 PM	90	23	0	113	9	11	0	20	11	11	0	22	155
Total	204	36	1	241	109	37	0	146	46	173	0	219	606
05:00 PM	71	41	0	112	41	9	0	50	15	75	0	90	252
05:15 PM	40	17	0	57	35	12	0	47	15	54	0	69	173
05:30 PM	46	20	0	66	24	11	0	35	6	49	0	55	156
05:45 PM	46	0	0	46	0	0	0	0	0	15	0	15	61
Total	203	78	0	281	100	32	0	132	36	193	0	229	642
06:00 PM	37	10	0	47	27	10	0	37	4	41	0	45	129
06:15 PM	26	15	0	41	20	8	0	28	14	46	0	60	129
06:30 PM	14	11	0	25	29	6	0	35	10	29	0	39	99
06:45 PM	26	8	0	34	18	7	0	25	1	35	0	36	95
Total	103	44	0	147	94	31	0	125	29	151	0	180	452
07:00 PM	18	9	0	27	15	7	0	22	3	27	0	30	79
07:15 PM	11	7	0	18	18	4	0	22	3	27	0	30	70
07:30 PM	9	6	0	15	16	7	0	23	1	28	0	29	67
07:45 PM	22	2	0	24	16	10	0	26	2	24	0	26	76
Total	60	24	0	84	65	28	0	93	9	106	0	115	292
08:00 PM	12	6	0	18	19	3	0	22	2	25	0	27	67
08:15 PM	7	7	0	14	21	3	0	24	2	18	0	20	58
08:30 PM	10	9	0	19	14	3	0	17	1	26	0	27	63
08:45 PM	5	6	0	11	17	5	0	22	3	19	0	22	55
Total	34	28	0	62	71	14	0	85	8	88	0	96	243
Grand Total	1984	1151	1	3136	1002	315	1	1318	383	2001	1	2385	6839
Apprch %	63.3	36.7	0		76	23.9	0.1		16.1	83.9	0		
Total %	29	16.8	0	45.9	14.7	4.6	0	19.3	5.6	29.3	0	34.9	

L2 Data Collection

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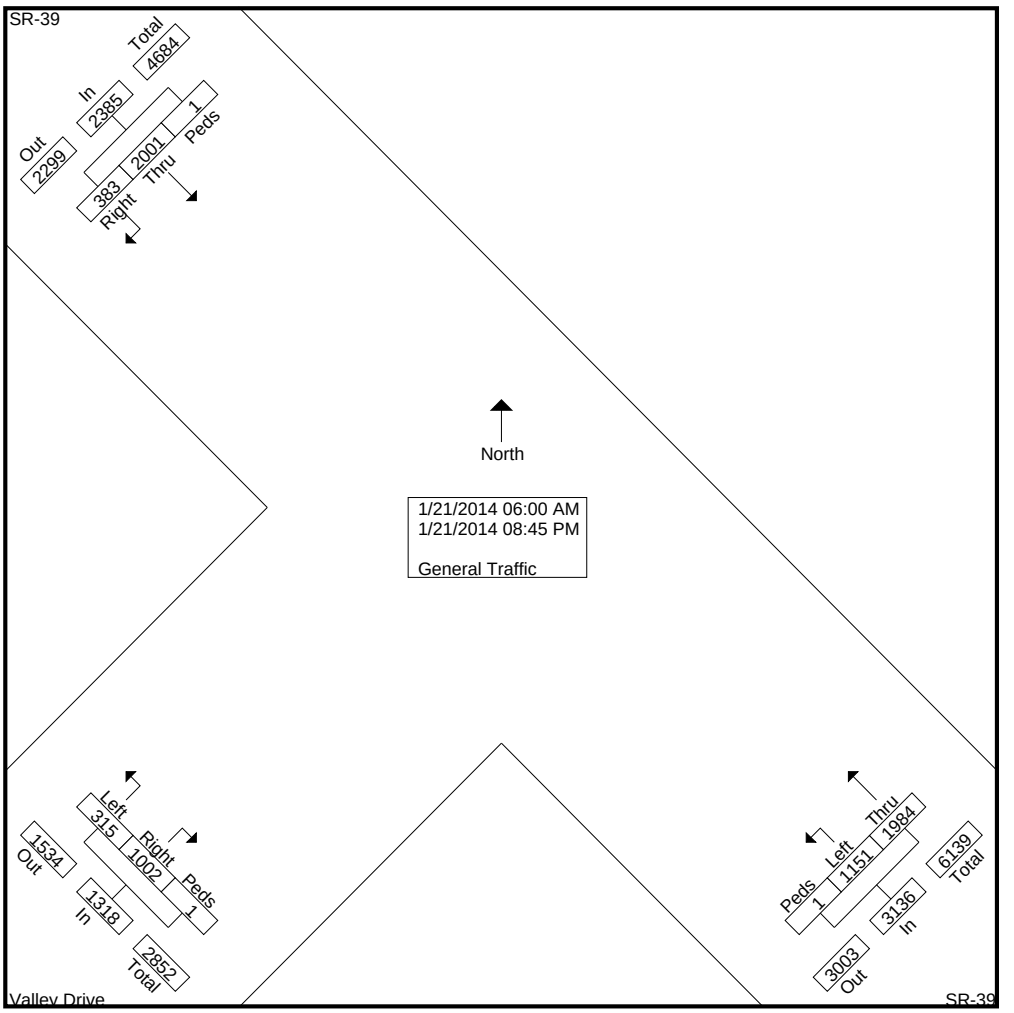
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 3



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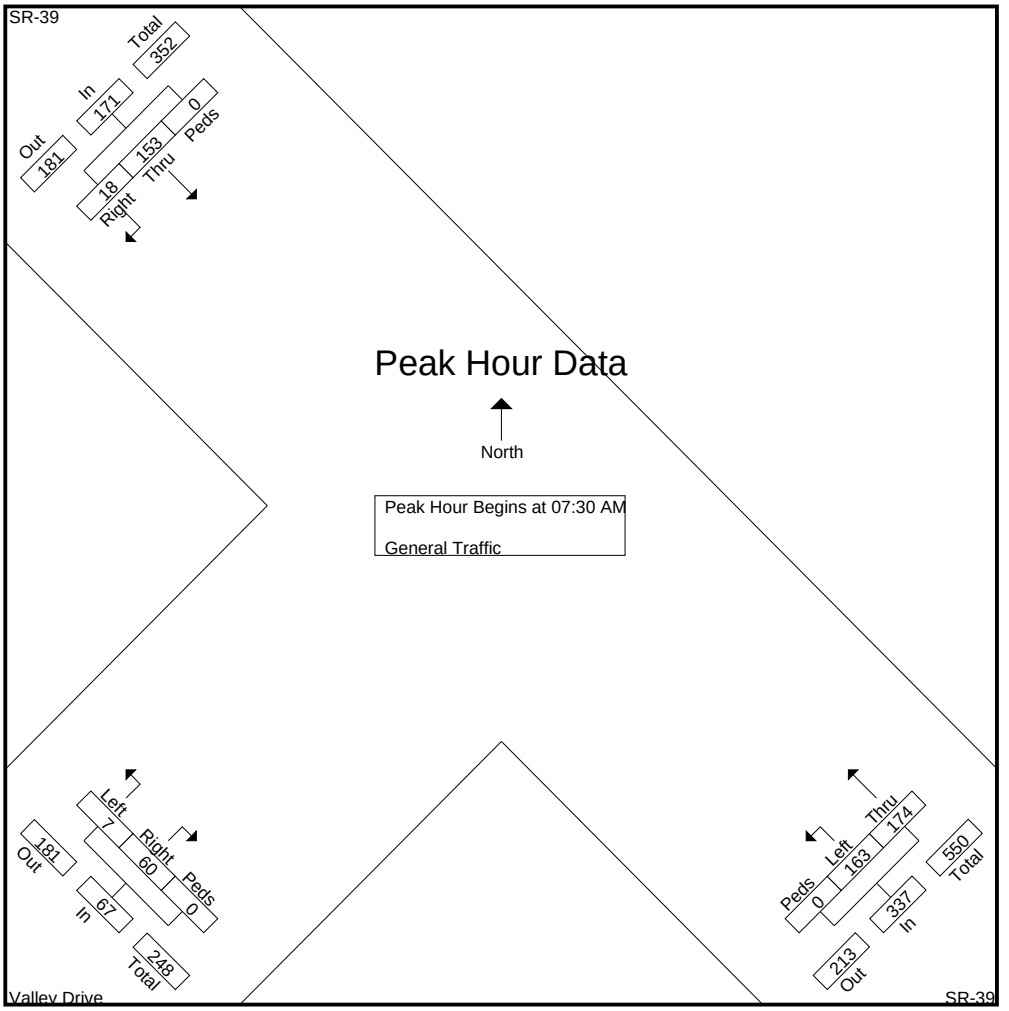
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 4

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**52**	38	0	90	7	2	0	9	5	31	0	36	135
07:45 AM	45	**54**	0	**99**	**20**	**3**	0	**23**	**7**	33	0	40	**162**
08:00 AM	34	33	0	67	16	1	0	17	3	34	0	37	121
08:15 AM	43	38	0	81	17	1	0	18	3	**55**	0	**58**	157
Total Volume	174	163	0	337	60	7	0	67	18	153	0	171	575
% App. Total	51.6	48.4	0		89.6	10.4	0		10.5	89.5	0		
PHF	.837	.755	.000	.851	.750	.583	.000	.728	.643	.695	.000	.737	.887



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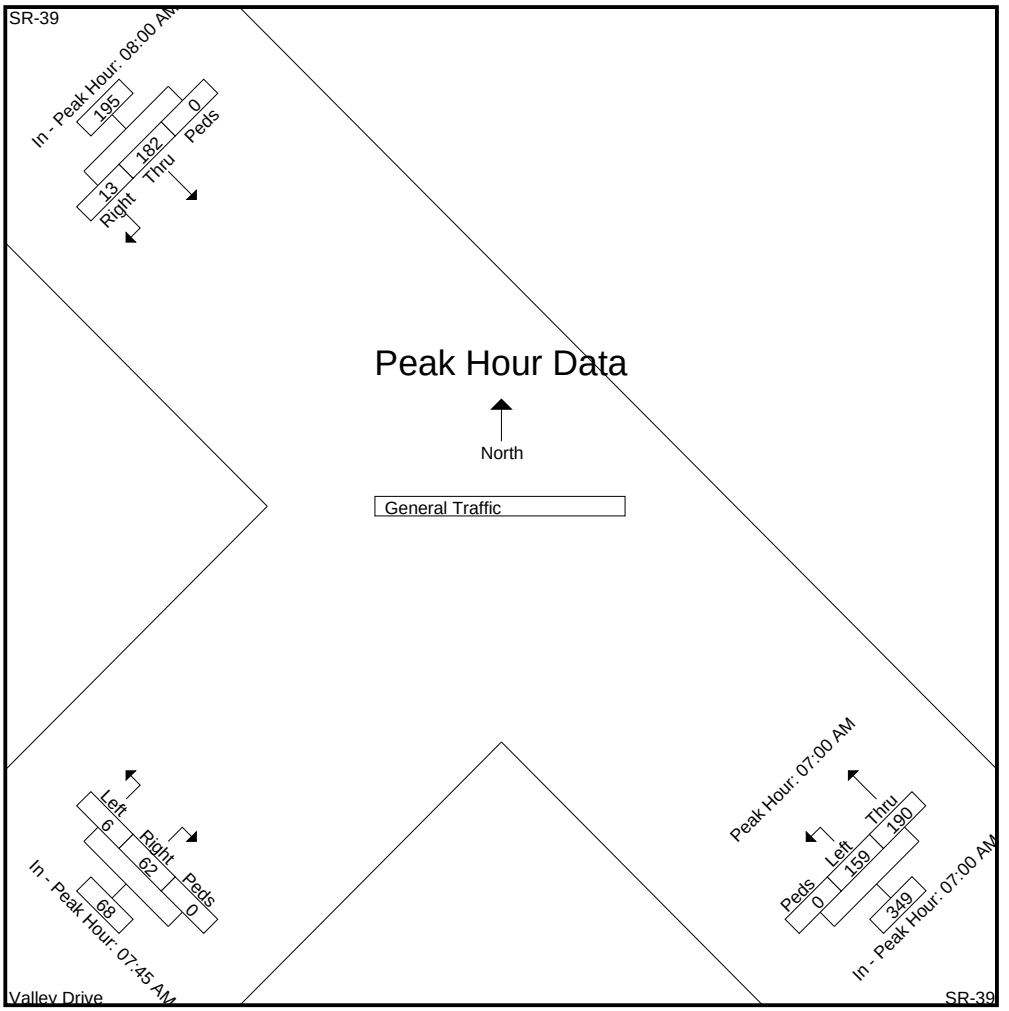
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 5

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:00 AM				07:45 AM				08:00 AM				
+0 mins.	40	28	0	68	**20**	**3**	0	**23**	3	34	0	37	
+15 mins.	**53**	39	0	92	16	1	0	17	3	**55**	0	**58**	
+30 mins.	52	38	0	90	17	1	0	18	**4**	46	0	50	
+45 mins.	45	**54**	0	**99**	9	1	0	10	3	47	0	50	
Total Volume	190	159	0	349	62	6	0	68	13	182	0	195	
% App. Total	54.4	45.6	0		91.2	8.8	0		6.7	93.3	0		
PHF	.896	.736	.000	.881	.775	.500	.000	.739	.813	.827	.000	.841	



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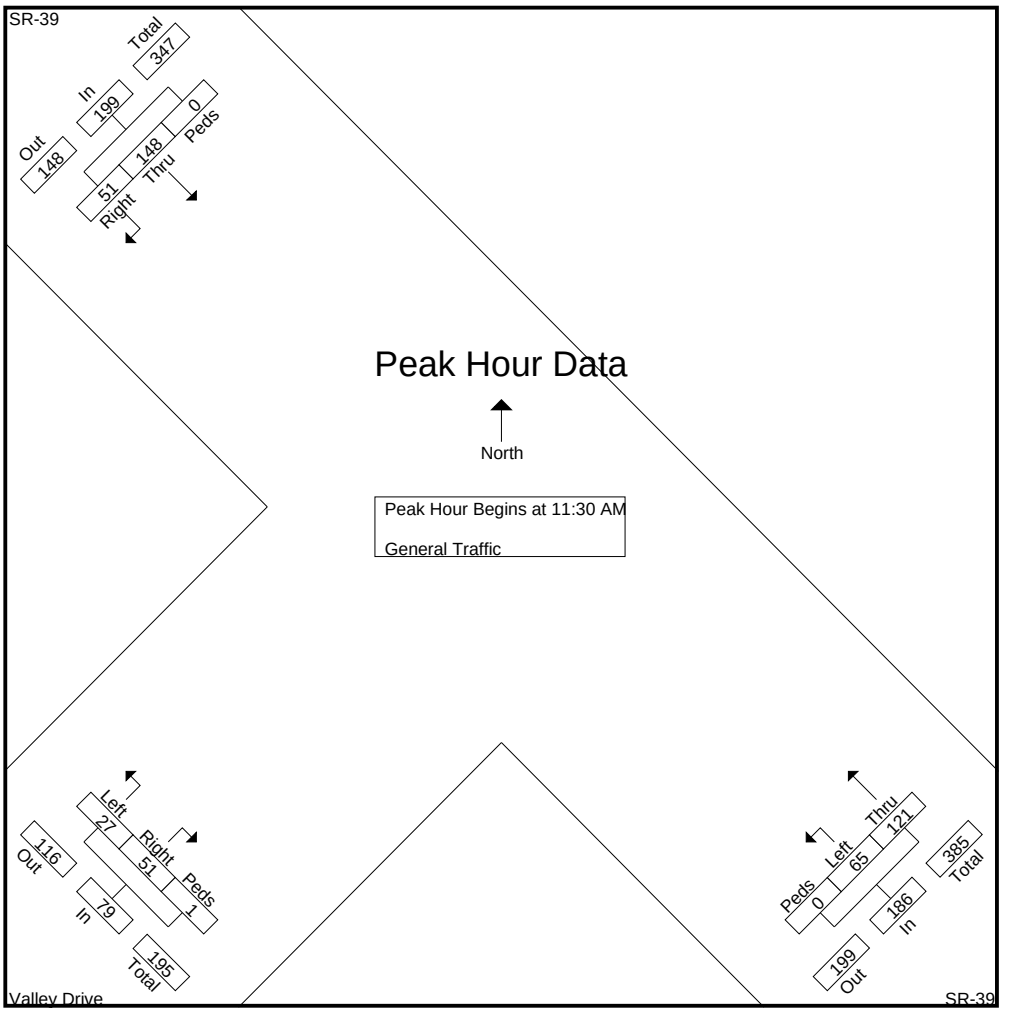
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 6

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:30 AM													
11:30 AM	19	12	0	31	14	3	0	17	6	40	0	46	94
11:45 AM	34	**26**	0	**60**	9	8	0	17	14	**42**	0	56	133
12:00 PM	27	14	0	41	12	5	0	17	10	28	0	38	96
12:15 PM	**41**	13	0	54	**16**	**11**	**1**	**28**	**21**	38	0	**59**	**141**
Total Volume	121	65	0	186	51	27	1	79	51	148	0	199	464
% App. Total	65.1	34.9	0		64.6	34.2	1.3		25.6	74.4	0		
PHF	.738	.625	.000	.775	.797	.614	.250	.705	.607	.881	.000	.843	.823



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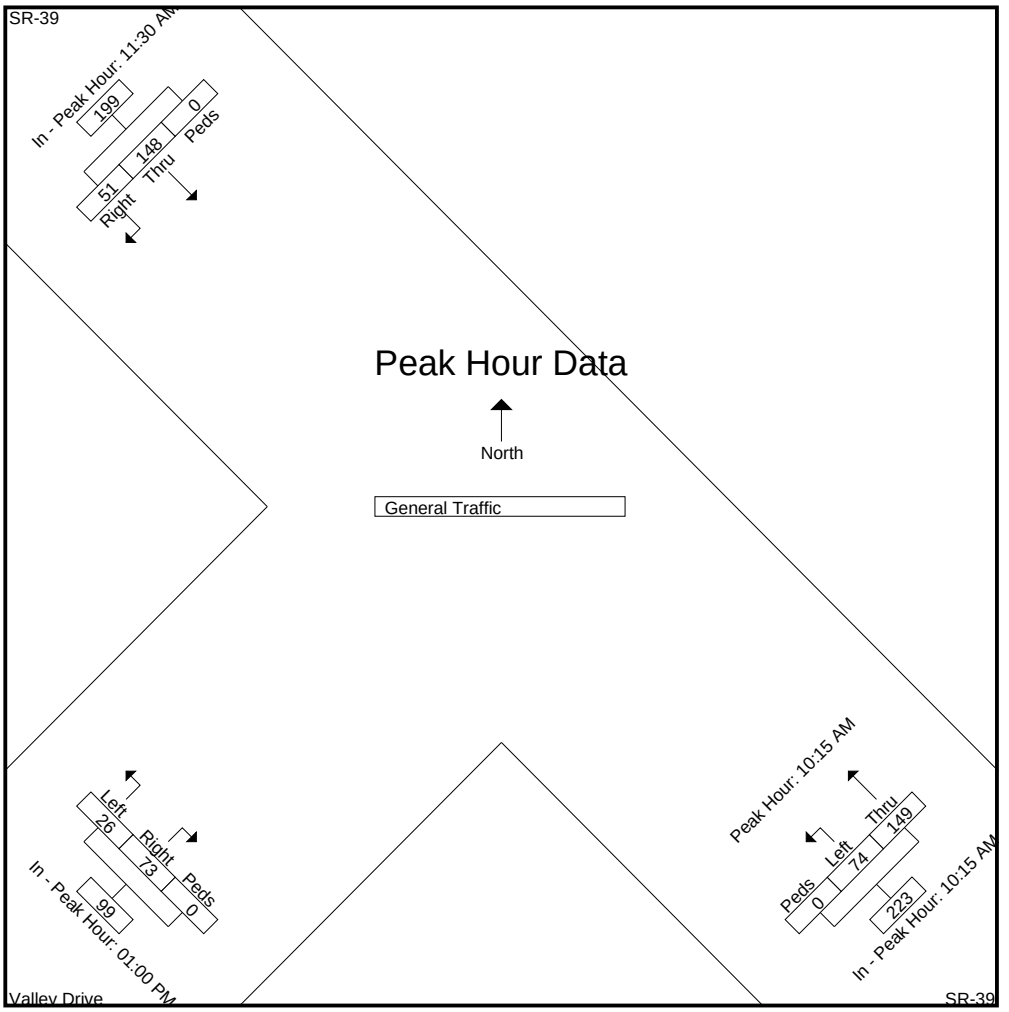
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 7

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	10:15 AM				01:00 PM				11:30 AM				
+0 mins.	38	16	0	54	19	7	0	26	6	40	0	46	
+15 mins.	28	20	0	48	**22**	5	0	27	14	**42**	0	56	
+30 mins.	**43**	**26**	0	**69**	13	5	0	18	10	28	0	38	
+45 mins.	40	12	0	52	19	**9**	0	**28**	**21**	38	0	**59**	
Total Volume	149	74	0	223	73	26	0	99	51	148	0	199	
% App. Total	66.8	33.2	0		73.7	26.3	0		25.6	74.4	0		
PHF	.866	.712	.000	.808	.830	.722	.000	.884	.607	.881	.000	.843	



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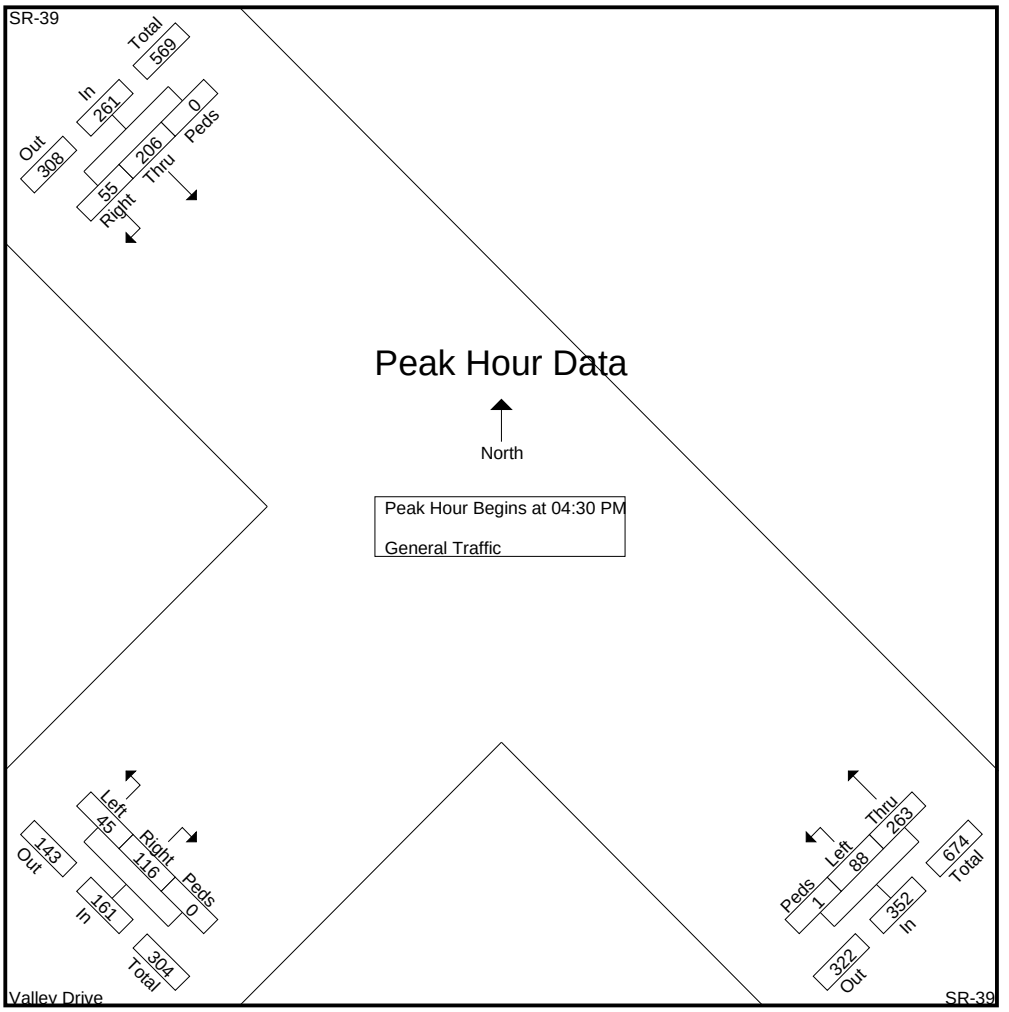
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 8

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	62	7	**1**	70	31	**13**	0	44	14	66	0	80	194
04:45 PM	**90**	23	0	**113**	9	11	0	20	11	11	0	22	155
05:00 PM	71	**41**	0	112	**41**	9	0	**50**	**15**	**75**	0	**90**	**252**
05:15 PM	40	17	0	57	35	12	0	47	15	54	0	69	173
Total Volume	263	88	1	352	116	45	0	161	55	206	0	261	774
% App. Total	74.7	25	0.3		72	28	0		21.1	78.9	0		
PHF	.731	.537	.250	.779	.707	.865	.000	.805	.917	.687	.000	.725	.768



L2 Data Collection

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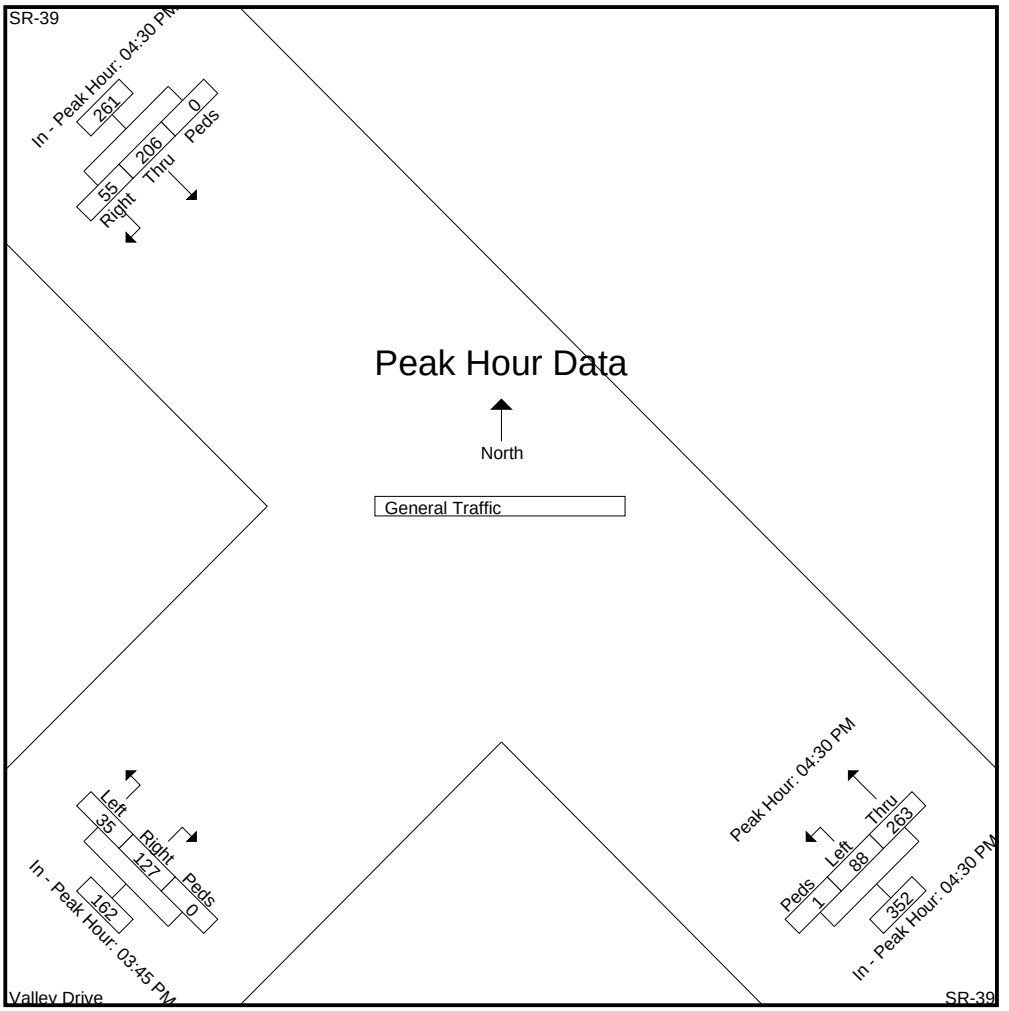
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 9

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:30 PM				03:45 PM				04:30 PM				
+0 mins.	62	7	**1**	70	27	9	0	36	14	66	0	80	
+15 mins.	**90**	23	0	**113**	**35**	9	0	**44**	11	11	0	22	
+30 mins.	71	**41**	0	112	34	4	0	38	**15**	**75**	0	**90**	
+45 mins.	40	17	0	57	31	**13**	0	44	15	54	0	69	
Total Volume	263	88	1	352	127	35	0	162	55	206	0	261	
% App. Total	74.7	25	0.3		78.4	21.6	0		21.1	78.9	0		
PHF	.731	.537	.250	.779	.907	.673	.000	.920	.917	.687	.000	.725	



L2 Data Collection

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Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr
Site Code :
Start Date : 1/21/2014
Page No : 10

Image 1

L2 Data Collection

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Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 1

Groups Printed- General Traffic

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:00 AM	4	0	0	4	3	0	0	3	5	6	0	11	18
06:15 AM	3	6	0	9	8	1	0	9	3	13	0	16	34
06:30 AM	14	6	0	20	4	1	0	5	1	16	0	17	42
06:45 AM	4	5	0	9	10	0	0	10	6	17	0	23	42
Total	25	17	0	42	25	2	0	27	15	52	0	67	136
07:00 AM	9	2	0	11	10	0	0	10	5	16	0	21	42
07:15 AM	15	6	0	21	10	3	0	13	4	29	0	33	67
07:30 AM	9	8	0	17	16	1	1	18	3	38	0	41	76
07:45 AM	10	10	0	20	13	4	0	17	17	49	0	66	103
Total	43	26	0	69	49	8	1	58	29	132	0	161	288
08:00 AM	16	5	0	21	19	2	0	21	2	59	0	61	103
08:15 AM	29	12	0	41	14	3	0	17	4	62	0	66	124
08:30 AM	20	16	0	36	12	0	0	12	3	85	0	88	136
08:45 AM	25	12	0	37	13	4	0	17	7	75	0	82	136
Total	90	45	0	135	58	9	0	67	16	281	0	297	499
09:00 AM	26	11	0	37	17	6	0	23	9	61	0	70	130
09:15 AM	33	12	0	45	14	5	0	19	7	60	0	67	131
09:30 AM	34	13	0	47	13	3	0	16	6	48	0	54	117
09:45 AM	37	26	0	63	17	4	0	21	10	65	0	75	159
Total	130	62	0	192	61	18	0	79	32	234	0	266	537
10:00 AM	32	10	0	42	18	5	0	23	5	36	0	41	106
10:15 AM	32	22	0	54	21	4	0	25	6	52	0	58	137
10:30 AM	35	16	0	51	12	5	0	17	7	50	0	57	125
10:45 AM	39	31	0	70	13	4	0	17	10	51	0	61	148
Total	138	79	0	217	64	18	0	82	28	189	0	217	516
11:00 AM	44	16	0	60	19	4	0	23	8	51	0	59	142
11:15 AM	45	20	0	65	16	5	0	21	13	40	0	53	139
11:30 AM	57	20	0	77	19	3	0	22	15	57	0	72	171
11:45 AM	48	13	0	61	18	9	0	27	19	37	0	56	144
Total	194	69	0	263	72	21	0	93	55	185	0	240	596
12:00 PM	56	19	0	75	20	4	0	24	20	55	0	75	174
12:15 PM	35	24	0	59	29	8	0	37	8	64	0	72	168
12:30 PM	51	17	0	68	19	13	0	32	12	51	0	63	163
12:45 PM	54	30	0	84	29	3	0	32	13	63	0	76	192
Total	196	90	0	286	97	28	0	125	53	233	0	286	697
01:00 PM	50	31	0	81	18	5	0	23	12	47	0	59	163
01:15 PM	42	20	0	62	21	5	0	26	11	47	0	58	146
01:30 PM	53	22	0	75	21	14	0	35	12	47	0	59	169
01:45 PM	65	22	0	87	17	16	0	33	15	56	0	71	191
Total	210	95	0	305	77	40	0	117	50	197	0	247	669
02:00 PM	61	26	0	87	13	8	0	21	12	45	0	57	165
02:15 PM	59	18	0	77	24	16	0	40	22	51	0	73	190
02:30 PM	54	26	0	80	28	12	0	40	17	58	0	75	195
02:45 PM	57	20	0	77	24	11	0	35	16	56	0	72	184
Total	231	90	0	321	89	47	0	136	67	210	0	277	734
03:00 PM	69	26	0	95	25	23	0	48	12	62	0	74	217
03:15 PM	52	29	0	81	26	16	0	42	14	52	0	66	189
03:30 PM	74	19	0	93	25	9	0	34	12	62	0	74	201
03:45 PM	77	38	0	115	25	14	0	39	17	43	0	60	214
Total	272	112	0	384	101	62	0	163	55	219	0	274	821

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014

Groups Printed- General Traffic

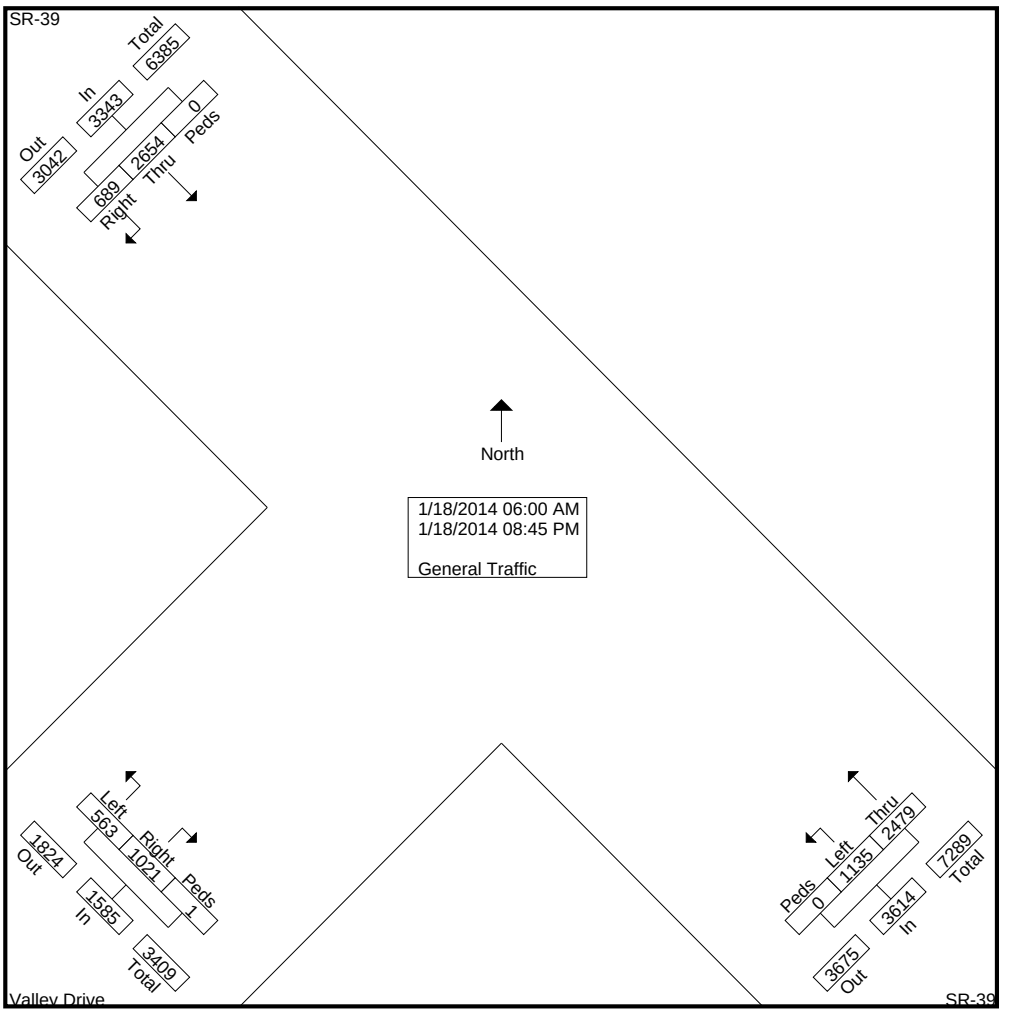
	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	64	41	0	105	32	22	0	54	14	49	0	63	222
04:15 PM	86	41	0	127	26	16	0	42	20	66	0	86	255
04:30 PM	96	35	0	131	24	18	0	42	27	52	0	79	252
04:45 PM	91	34	0	125	19	17	0	36	40	46	0	86	247
Total	337	151	0	488	101	73	0	174	101	213	0	314	976
05:00 PM	71	38	0	109	22	17	0	39	41	41	0	82	230
05:15 PM	71	30	0	101	19	16	0	35	29	33	0	62	198
05:30 PM	67	37	0	104	12	10	0	22	12	48	0	60	186
05:45 PM	59	33	0	92	14	12	0	26	10	38	0	48	166
Total	268	138	0	406	67	55	0	122	92	160	0	252	780
06:00 PM	44	22	0	66	19	19	0	38	20	37	0	57	161
06:15 PM	44	19	0	63	19	11	0	30	20	42	0	62	155
06:30 PM	38	20	0	58	16	8	0	24	8	39	0	47	129
06:45 PM	26	20	0	46	9	7	0	16	17	28	0	45	107
Total	152	81	0	233	63	45	0	108	65	146	0	211	552
07:00 PM	33	18	0	51	15	19	0	34	8	35	0	43	128
07:15 PM	34	12	0	46	14	31	0	45	7	32	0	39	130
07:30 PM	31	8	0	39	8	21	0	29	3	26	0	29	97
07:45 PM	26	7	0	33	12	12	0	24	3	24	0	27	84
Total	124	45	0	169	49	83	0	132	21	117	0	138	439
08:00 PM	22	7	0	29	11	11	0	22	5	20	0	25	76
08:15 PM	11	11	0	22	10	13	0	23	4	30	0	34	79
08:30 PM	13	8	0	21	12	18	0	30	1	17	0	18	69
08:45 PM	23	9	0	32	15	12	0	27	0	19	0	19	78
Total	69	35	0	104	48	54	0	102	10	86	0	96	302
Grand Total	2479	1135	0	3614	1021	563	1	1585	689	2654	0	3343	8542
Apprch %	68.6	31.4	0		64.4	35.5	0.1		20.6	79.4	0		
Total %	29	13.3	0	42.3	12	6.6	0	18.6	8.1	31.1	0	39.1	

L2 Data Collection

www.L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 3



L2 Data Collection

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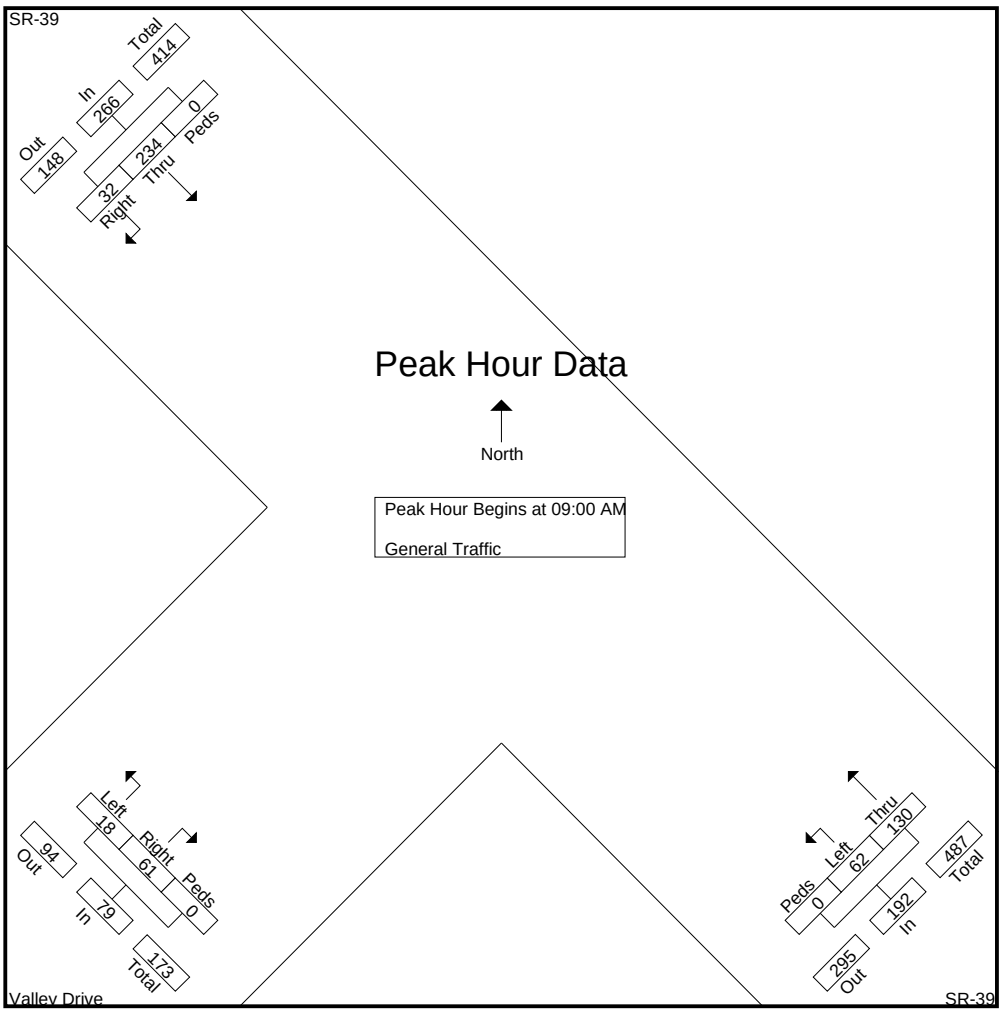
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 4

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 09:00 AM													
09:00 AM	26	11	0	37	**17**	**6**	0	**23**	9	61	0	70	130
09:15 AM	33	12	0	45	14	5	0	19	7	60	0	67	131
09:30 AM	34	13	0	47	13	3	0	16	6	48	0	54	117
09:45 AM	**37**	**26**	0	**63**	17	4	0	21	**10**	**65**	0	**75**	**159**
Total Volume	130	62	0	192	61	18	0	79	32	234	0	266	537
% App. Total	67.7	32.3	0		77.2	22.8	0		12	88	0		
PHF	.878	.596	.000	.762	.897	.750	.000	.859	.800	.900	.000	.887	.844



L2 Data Collection

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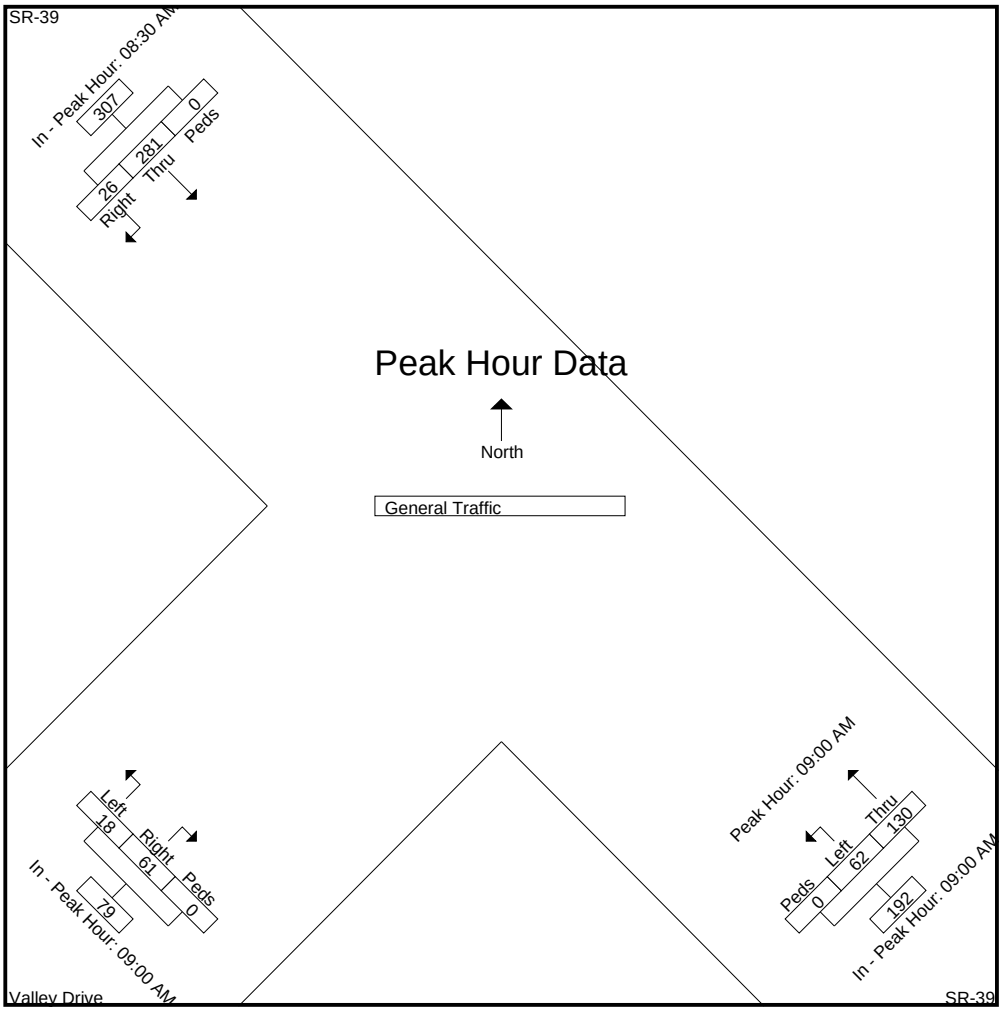
Idaho (208) 860-7554 Utah (801) 413-2993

Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 5

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	09:00 AM				09:00 AM				08:30 AM				
+0 mins.	26	11	0	37	**17**	**6**	0	**23**	3	**85**	0	**88**	
+15 mins.	33	12	0	45	14	5	0	19	7	75	0	82	
+30 mins.	34	13	0	47	13	3	0	16	**9**	61	0	70	
+45 mins.	**37**	**26**	0	**63**	17	4	0	21	7	60	0	67	
Total Volume	130	62	0	192	61	18	0	79	26	281	0	307	
% App. Total	67.7	32.3	0		77.2	22.8	0		8.5	91.5	0		
PHF	.878	.596	.000	.762	.897	.750	.000	.859	.722	.826	.000	.872	



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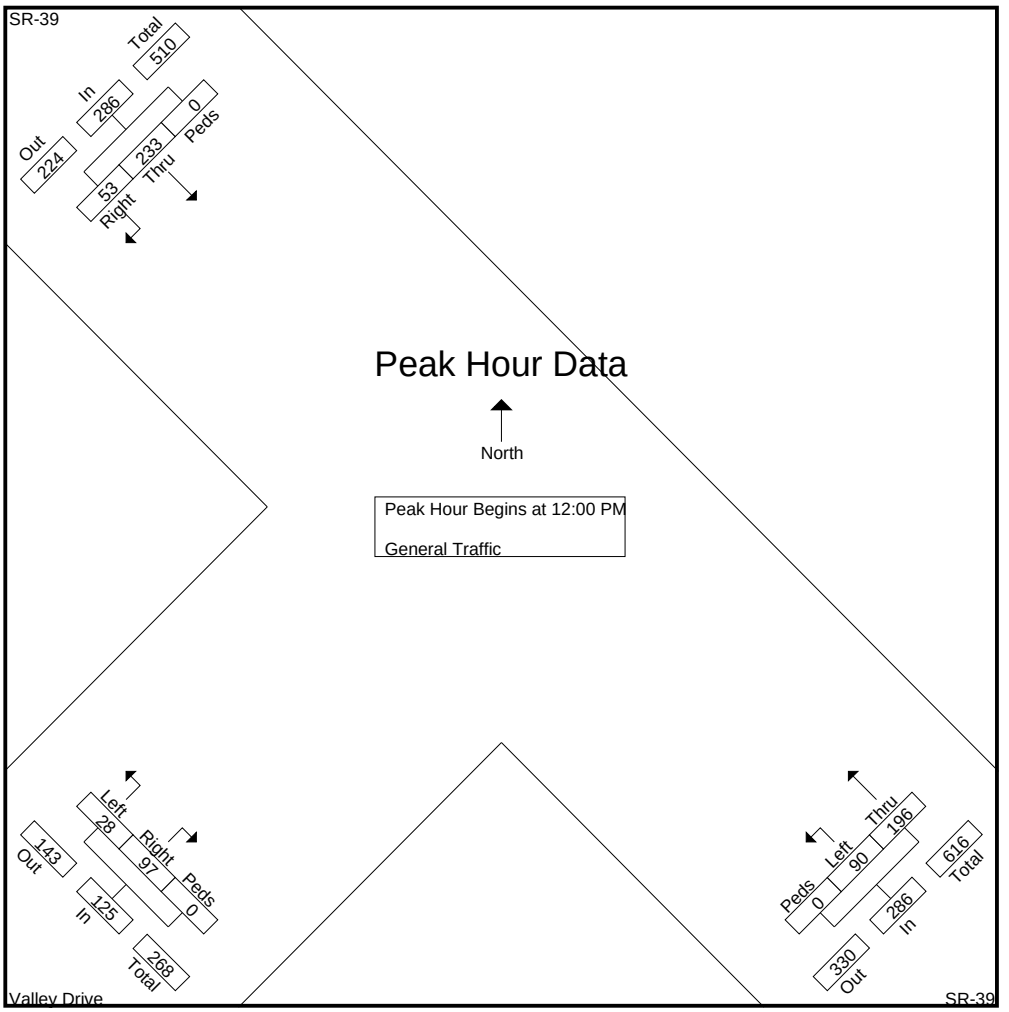
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 6

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:00 PM													
12:00 PM	**56**	19	0	75	20	4	0	24	**20**	55	0	75	174
12:15 PM	35	24	0	59	**29**	8	0	**37**	8	**64**	0	72	168
12:30 PM	51	17	0	68	19	**13**	0	32	12	51	0	63	163
12:45 PM	54	**30**	0	**84**	29	3	0	32	13	63	0	**76**	**192**
Total Volume	196	90	0	286	97	28	0	125	53	233	0	286	697
% App. Total	68.5	31.5	0		77.6	22.4	0		18.5	81.5	0		
PHF	.875	.750	.000	.851	.836	.538	.000	.845	.663	.910	.000	.941	.908



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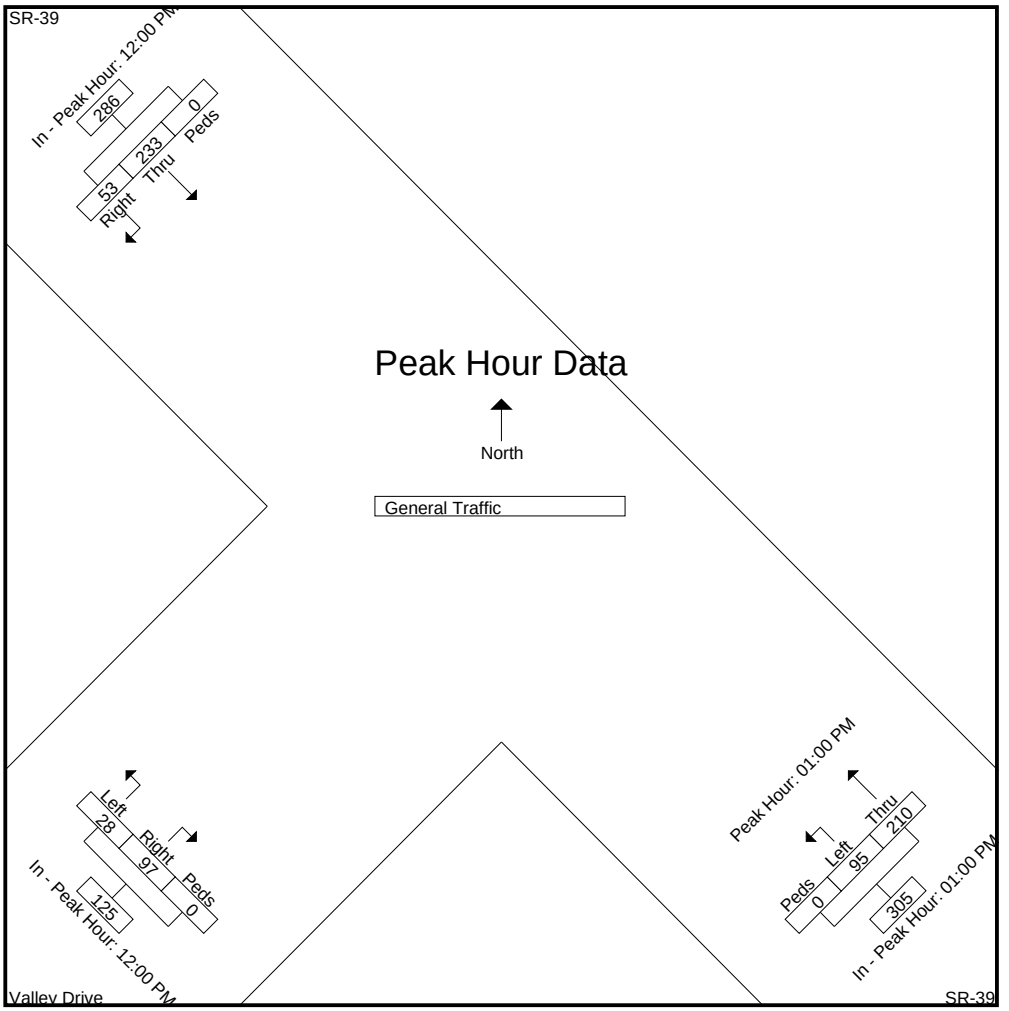
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 7

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	01:00 PM				12:00 PM				12:00 PM				
+0 mins.	50	**31**	0	81	20	4	0	24	**20**	55	0	75	
+15 mins.	42	20	0	62	**29**	8	0	**37**	8	**64**	0	72	
+30 mins.	53	22	0	75	19	**13**	0	32	12	51	0	63	
+45 mins.	**65**	22	0	**87**	29	3	0	32	13	63	0	**76**	
Total Volume	210	95	0	305	97	28	0	125	53	233	0	286	
% App. Total	68.9	31.1	0		77.6	22.4	0		18.5	81.5	0		
PHF	.808	.766	.000	.876	.836	.538	.000	.845	.663	.910	.000	.941	



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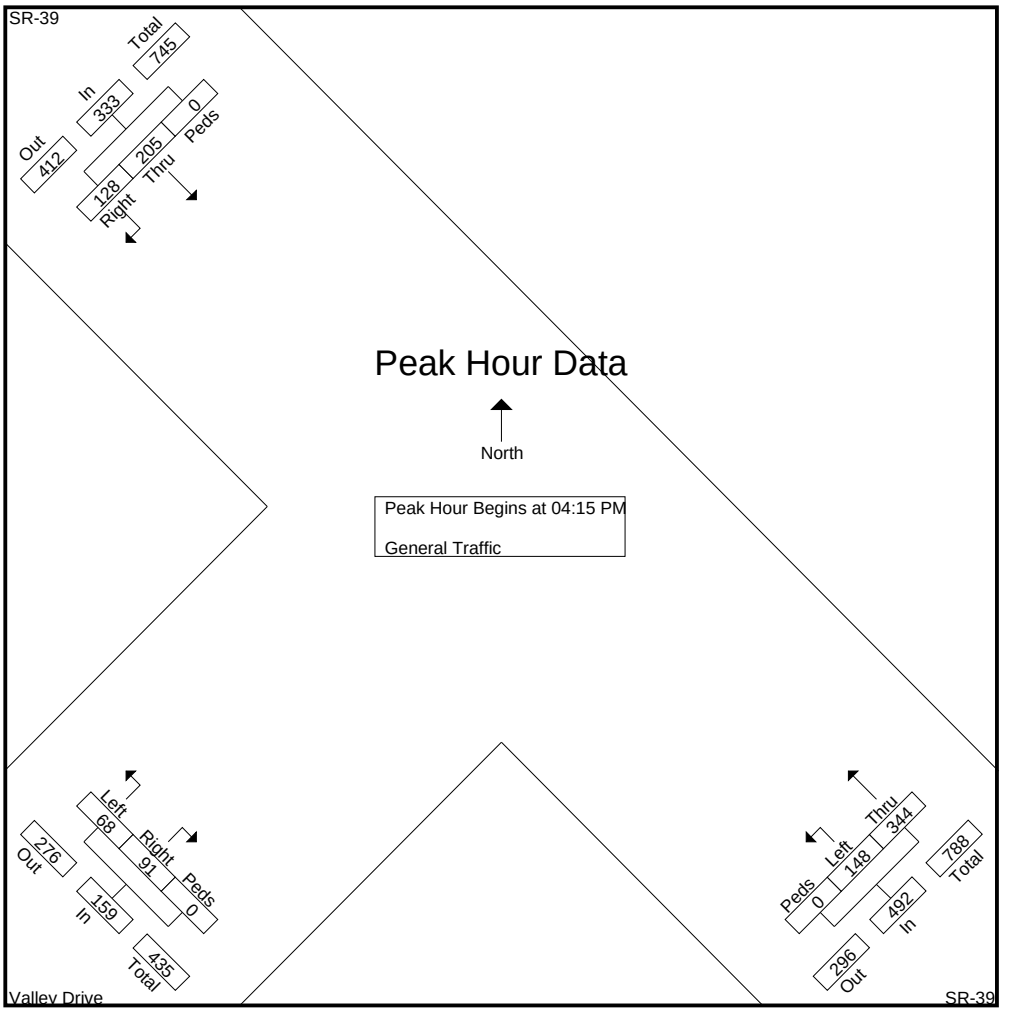
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 8

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	86	**41**	0	127	**26**	16	0	**42**	20	**66**	0	**86**	**255**
04:30 PM	**96**	35	0	**131**	24	**18**	0	42	27	52	0	79	252
04:45 PM	91	34	0	125	19	17	0	36	40	46	0	86	247
05:00 PM	71	38	0	109	22	17	0	39	**41**	41	0	82	230
Total Volume	344	148	0	492	91	68	0	159	128	205	0	333	984
% App. Total	69.9	30.1	0		57.2	42.8	0		38.4	61.6	0		
PHF	.896	.902	.000	.939	.875	.944	.000	.946	.780	.777	.000	.968	.965



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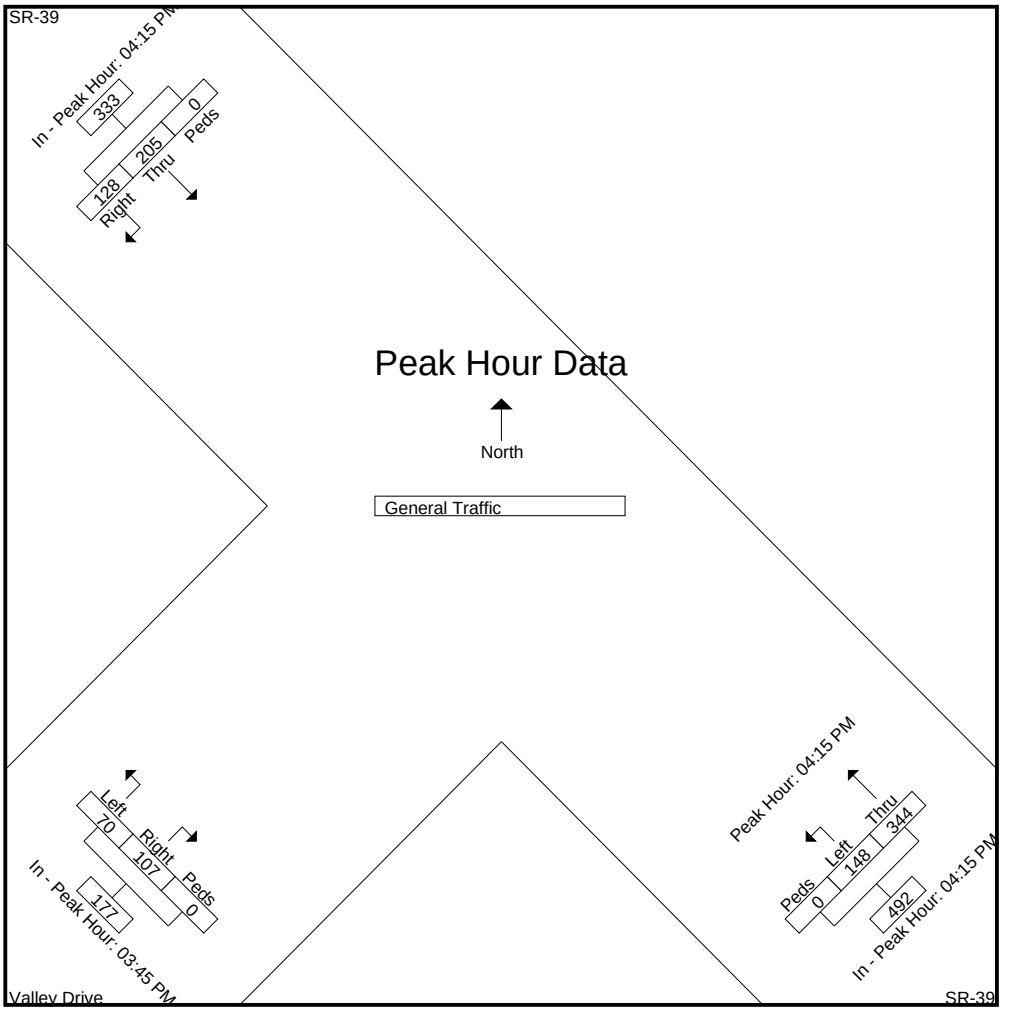
Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 9

	SR-39 From Southeast				Valley Drive From Southwest				SR-39 From Northwest				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:15 PM				03:45 PM				04:15 PM				
+0 mins.	86	**41**	0	127	25	14	0	39	20	**66**	0	**86**	
+15 mins.	**96**	35	0	**131**	**32**	**22**	0	**54**	27	52	0	79	
+30 mins.	91	34	0	125	26	16	0	42	40	46	0	86	
+45 mins.	71	38	0	109	24	18	0	42	**41**	41	0	82	
Total Volume	344	148	0	492	107	70	0	177	128	205	0	333	
% App. Total	69.9	30.1	0		60.5	39.5	0		38.4	61.6	0		
PHF	.896	.902	.000	.939	.836	.795	.000	.819	.780	.777	.000	.968	



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Study: PEC0003
Intersection: SR-39 / Valley Drive
City, State: Ogden Canyon, Utah
Control: Stop Sign

File Name : SR-39 Valley Dr SAT
Site Code :
Start Date : 1/18/2014
Page No : 10

Image 1

Appendix C – Traffic Signal Warrant Analyses

TRAFFIC CONTROL STUDY - WARRANTS FOR TRAFFIC SIGNALS

North Dakota Department of Transportation. Programming Division
SFN 7924 (Rev. 02-2013)

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

Date	Prepared by	City	Analysis Year 2014
Major Road 6/4/14	KDH	Speed Limit (mph) 25	Number of Lanes 1
Minor Road SR-158		Speed Limit (mph) 25	Number of Lanes ↑ ↑↓
ROUTE 3460		25	↑

Minor road right-turn traffic excluded from the analysis because there is an exclusive right turn lane and right-turn traffic enters the Major Road with minimal conflict: ☐ Yes ☑ No

1. Posted or 85th-percentile speed of major road traffic is > 40 mph: ☑ Yes ☐ No
2. In built-up area of isolated community < 10.000 population: ☑ Yes ☐ No

If question 1 or 2 is answered yes then use 70% volume criteria: ☐ 70% ☑ 100%

WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Requirements: Either Condition A (Minimum Vehicular Volume) or Condition B (Interruption of Continuous Traffic) is satisfied to 100% of the stated volumes for each of any 8 hours of an average day.
Or: Both Condition A and Condition B are satisfied to 80% of the stated volumes for each of any 8 hours of an average day.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000

	8 Highest Hour Volumes							
	1	2	3	4	5	6	7	8
Both Approaches	~~516~~	370	472	471				
Major Road Highest Approach	~~205~~	183	211	188				
Minor Road								

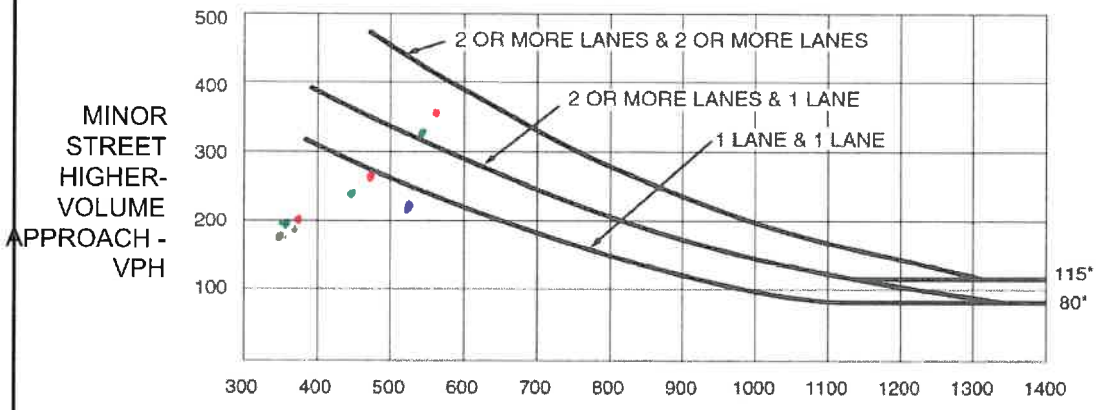
2014 - NO
2019 - NO
2025 - NO

Warrant 1 Met? ☐ Yes ☑ No ☐ Does not apply

WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Requirements: Plot four highest hour volumes on the applicable figure below. If four points lie above the applicable curve then the warrant is satisfied.

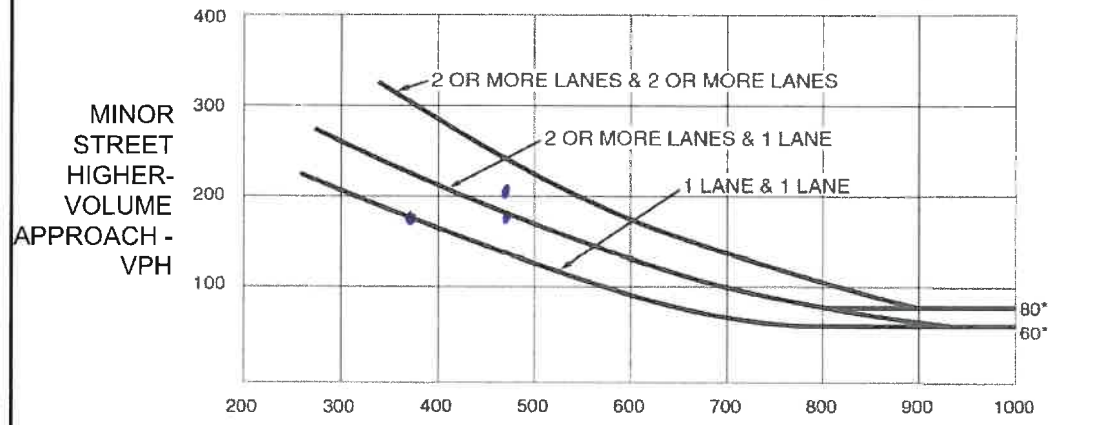
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



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

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

2014 - NO
2019 - NO
2025 - NO

Warrant 2 Met? ☐ Yes ☑ No ☐ Does not apply

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 3, PEAK HOUR

Requirements: This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

Unusual Condition

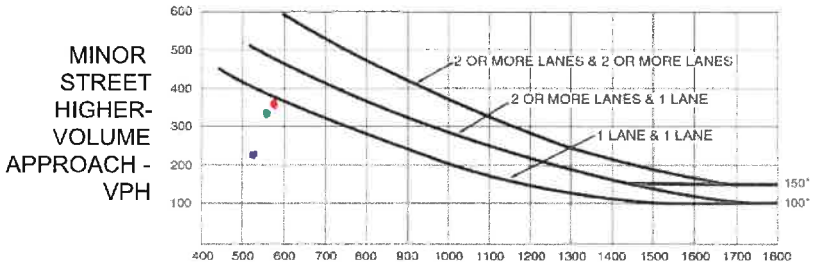
Either Condition A or Condition B is satisfied.

Condition A: The condition is satisfied if all three of the criteria are satisfied.

Criteria	Criteria Met If	Peak Hour Value	Satisfied? Yes	No
Delay on Minor Approach (veh-hr)	~~4 veh-hr for 1 lane approach or~~ 5 veh-hr for two-lane approach		☐	☐
Volume on Minor Approach (veh/hr)	~~100 veh/hr for one moving lane of traffic~~ or 150 veh/hr for two lanes		☐	☐
Total Entering Volume (veh/hr)	~~650 veh/hr for 3 approaches~~ or 800 veh/hr for 4 or more		☐	☐

Condition B: Plot peak hour volumes on the applicable figure below. These conditions exist for the same 1 hour (and four consecutive 15-minute periods) of an average day. If the point is above the appropriate line, then the warrant is satisfied.

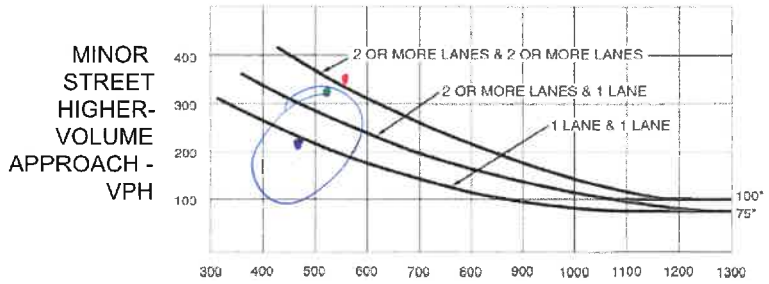
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3 Met? ☑ Yes ☑ No ☐ Does not apply

2014 - NO
2019 - YES
2025 - YES

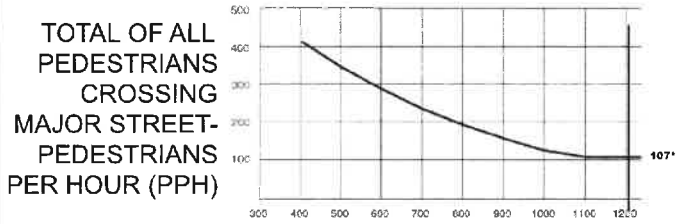
WARRANT 4, PEDESTRIAN VOLUME

Requirements: This warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. It shall not be applied at locations where the distance to the nearest traffic signal or stop sign controlling the street that pedestrians desire to cross is less than 300 feet.

Either criterion A or criterion B is satisfied.

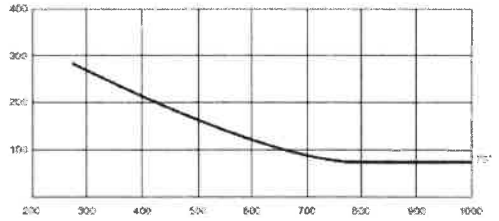
A: For each of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

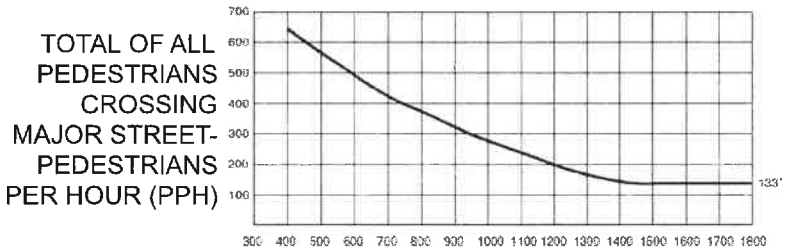
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

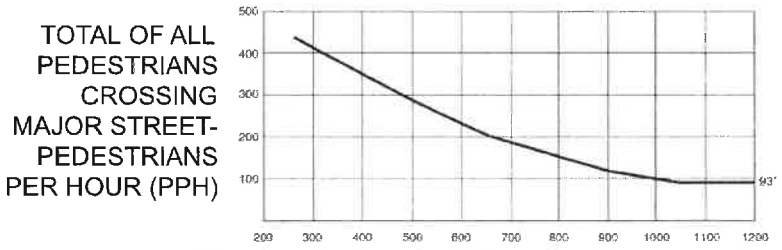
B: For 1 hour (any four consecutive 15-minute periods) of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-7

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

If the speed on major street exceeds 40 mph. or if population is less than 10.000. Figure 4C-6 or 4C-8 may be used.

Warrant 4 Met? ☐ Yes ☑ No ☐ Does not apply

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 5, SCHOOL CROSSING

Requirements: This warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant. the word "schoolchildren" includes elementary through high school students.

The warrant is satisfied if all three of the criteria are satisfied.

Criteria	Satisfied? Yes	No
~~During the time period with schoolchildren are using the crossing:~~ Gaps < Number of minutes	☐	☐
~~There are a minimum of 20 schoolchildren during the highest crossing hour.~~	☐	☐
~~The nearest traffic signal along the major road is located more than 300 ft away.~~ Or. the nearest traffic signal is within 300 ft but the proposed traffic signal will not restrict the progressive movement of traffic.	☐	☐

Warrant 5 Met? ☐ Yes ☑ No ☐ Does not apply

WARRANT 6, COORDINATED SIGNAL SYSTEM

Requirements: The warrant is satisfied if either criteria is satisfied. This warrant should not be applied when the resulting signal spacing would be less than 1000 ft.

Criteria	Satisfied? Yes	No
On a one-way street or a street that has traffic predominantly in one direction. the adjacent signals are so far apart that they do not provide the necessary degree of vehicular platooning.	☐	☐
On a two-way street. adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.	☐	☐

Warrant 6 Met? ☐ Yes ☑ No ☐ Does not apply

~~WARRANT 7, CRASH EXPERIENCE~~

Requirements: The warrant is satisfied if all three of the criteria are satisfied.

Criteria		Hour	Satisfied? Yes	No
One of the warrants to the right is met:	Warrant 4.1 at 80% of volume requirements: 80 ~~ped/hr for 4 hrs or 152 ped/hr for 1 hr~~		☐	☐
	~~Warrant 1, Condition A (80% satisfied)~~		☐	☐
	~~Warrant 1, Condition B (80% satisfied)~~		☐	☐
Adequate trial of other remedial measures has failed to reduce crash frequency.		Measures Tried	☐	☐
~~Five or more reported crashes. of types susceptible to correction by signal control. have occurred within a 12 month period.~~		Number of Crashes	☐	☐

~~**Warrant 7 Met?** ☐ Yes ☑ No ☐ Does not apply~~

23 USC §409 Documents
NDDOT Reserves All Objections

WARRANT 8, ROADWAY NETWORK:

Requirements: A "major route" as used in this signal warrant shall have at least one of the following characteristics:

Characteristics of a Major Route	Satisfied? Yes	No
Part of the street or highway system that serves as a principal roadway network for through traffic flow.	☐	☐
Rural or suburban highway outside of, entering, or traversing a city.	☐	☐
Appears as a major route on an official plan.	☐	☐

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

Criteria			Satisfied? Yes	No
1. Both of the criteria to the right are met.	a. Total entering volume of at least 1,000 veh/hr during typical weekday peak hour.	Entering volume:	☐	☐
	b. Five-year projected volumes that satisfy one or more of Warrants 1. 2. or 3.	Warrant(s) satisfied:	☐	☐
2. Total entering volume of at least 1,000 veh/hr for each of any 5 hours of a non-normal business day (Sat. or Sun.)		Hour / Volume	☐	☐

Warrant 8 Met? ☐ Yes ☑ No ☐ Does not apply

WARRANT 9, INTERSECTION NEAR A GRADE CROSSING

Requirements: This warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met. but the proximity to the intersection of grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Both condition A and condition B is satisfied.

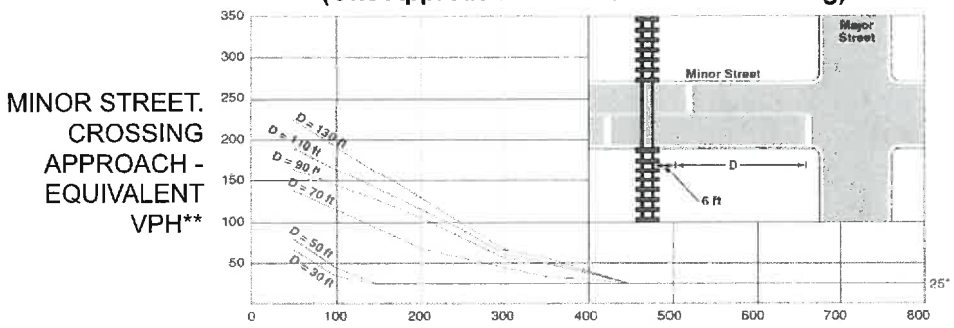
Criteria	Satisfied? Yes	No
A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach.	☐	☐
B. During the highest traffic volume hour during which rail traffic use the crossing. the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only. approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D. which is the clear storage distance as defined in Section 1A.13	☐	☐

Warrant 9 Continued on next page

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 9, CONTINUED

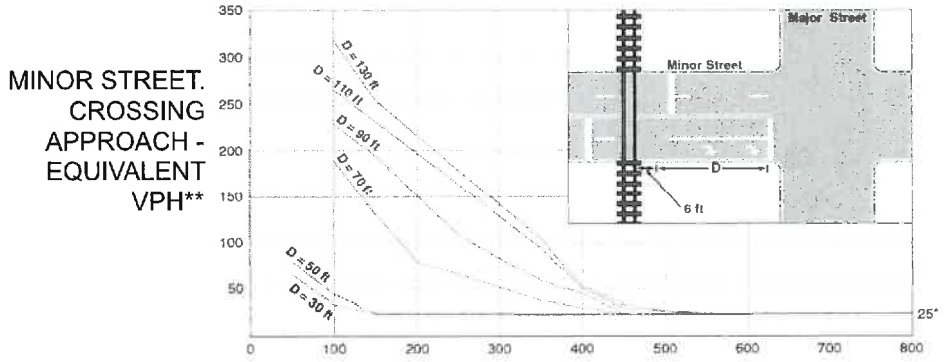
~~Figure 4C-9. Warrant 9, Intersection near a Grade Crossing~~
(One Approach Lane at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Figure 4C-10. Warrant 9, Intersection near a Grade Crossing
(Two or More Approach Lanes at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Warrant 9 Met? ☐ Yes ☑ No ☐ Does not apply

~~CONCLUSION~~

Warrants Satisfied
2014 - NONE
2019 - 3
2025 - 3

Signal Warranted ☐ Yes ☑ No

Remarks USED SATURDAY VOLUMES - WEEKDAY VOLUMES ARE LESS
2014 - NO
2019 - 70%
2025 - 70%

TRAFFIC CONTROL STUDY - WARRANTS FOR TRAFFIC SIGNALS

North Dakota Department of Transportation. Programming Division
SFN 7924 (Rev. 02-2013)

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

Date	Prepared by	City	Analysis Year
6/4/14	KDH		2014

		Speed Limit (mph)	Number of Lanes
Major Road	SR-39	45	1
Minor Road	SR-158	40	1

Minor road right-turn traffic excluded from the analysis because there is an exclusive right turn lane and right-turn traffic enters the Major Road with minimal conflict: ☐ Yes ☑ No

1. Posted or 85th-percentile speed of major road traffic is > 40 mph: ☑ Yes ☐ No
2. In built-up area of isolated community < 10.000 population: ☑ Yes ☐ No

If question 1 or 2 is answered yes then use 70% volume criteria: ☑ 70% ☐ 100%

WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Requirements: Either Condition A (Minimum Vehicular Volume) or Condition B (Interruption of Continuous Traffic) is satisfied to 100% of the stated volumes for each of any 8 hours of an average day.
Or: Both Condition A and Condition B are satisfied to 80% of the stated volumes for each of any 8 hours of an average day.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

NO

Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

NO

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000

	8 Highest Hour Volumes							
	1	2	3	4	5	6	7	8
Both Approaches	361	396	411	480	446	478		
Major Road Highest Approach Minor Road	171	188	190	234	217	305		

2014 - NO
2019 - NO
2025 - ~~YES~~ NO

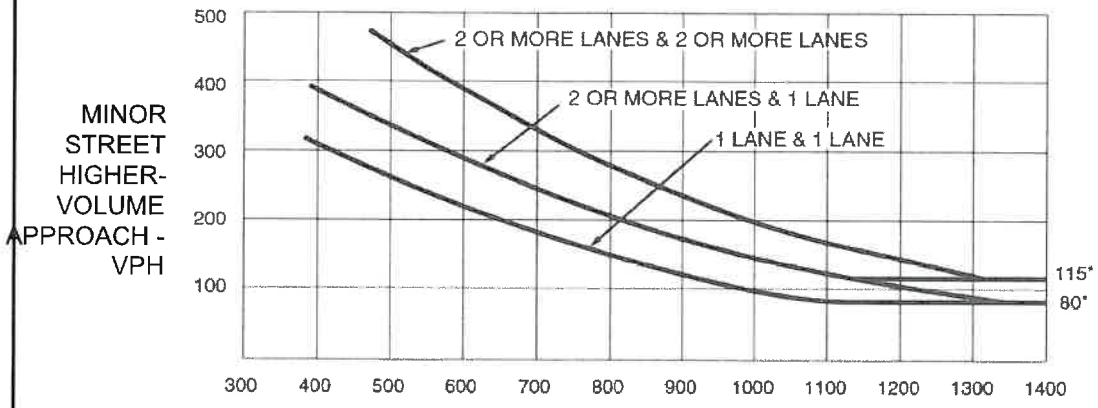
Warrant 1 Met? ☐ Yes ☑ No ☐ Does not apply

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Requirements: Plot four highest hour volumes on the applicable figure below. If four points lie above the applicable curve then the warrant is satisfied.

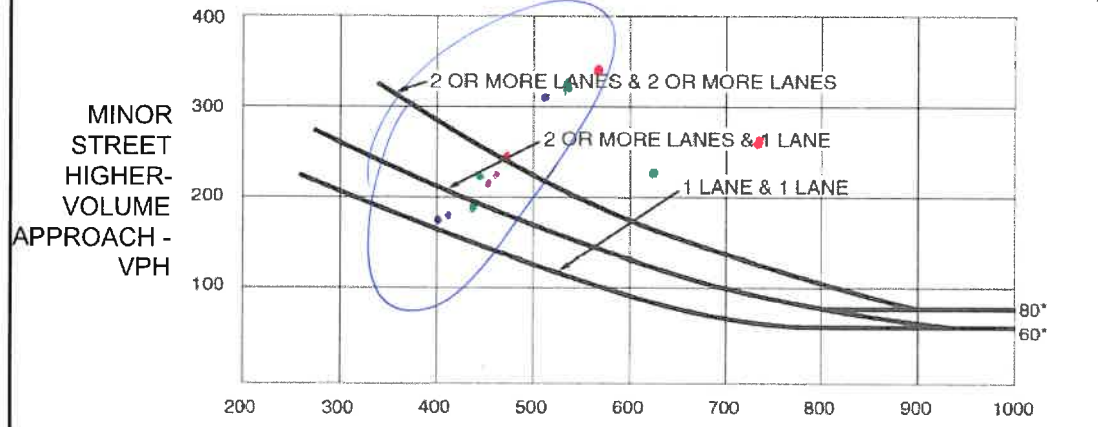
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



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

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

2014 - YES
2019 - YES
2025 - YES

Warrant 2 Met? ☑ Yes ☐ No ☐ ~~Does not apply~~

WARRANT 3, PEAK HOUR

Requirements: This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

Unusual Condition

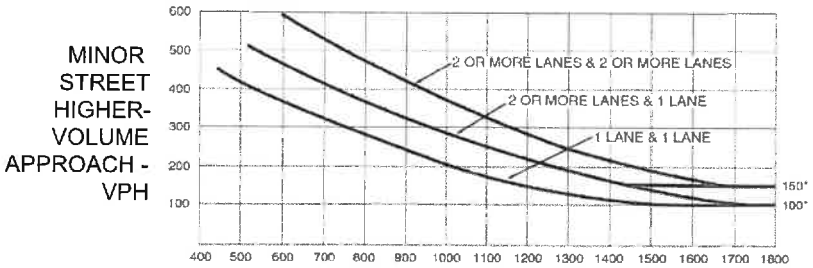
Either Condition A or Condition B is satisfied.

Condition A: The condition is satisfied if all three of the criteria are satisfied.

Criteria	Criteria Met If	Peak Hour Value	Satisfied? Yes	No
Delay on Minor Approach (veh-hr)	~~4 veh-hr for 1 lane approach or~~ 5 veh-hr for two-lane approach		☐	☐
Volume on Minor Approach (veh/hr)	~~100 veh/hr for one moving lane of traffic~~ or 150 veh/hr for two lanes		☐	☐
Total Entering Volume (veh/hr)	~~650 veh/hr for 3 approaches~~ or 800 veh/hr for 4 or more		☐	☐

Condition B: Plot peak hour volumes on the applicable figure below. These conditions exist for the same 1 hour (and four consecutive 15-minute periods) of an average day. If the point is above the appropriate line, then the warrant is satisfied.

Figure 4C-3. Warrant 3, Peak Hour

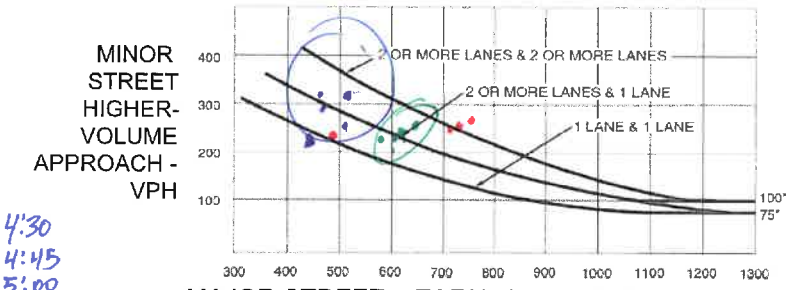


MAJOR STREET -- TOTAL OF BOTH APPROACHES
VEHICLES PER HOUR (VPH)

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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



4:30
4:45
5:00
5:15

MAJOR STREET -- TOTAL OF BOTH APPROACHES
VEHICLES PER HOUR (VPH)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

2014 - YES
2019 - YES
2025 - YES

Warrant 3 Met? ☑ Yes ☐ No ☐ Does not apply

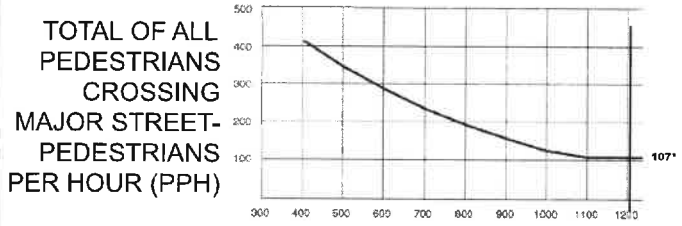
WARRANT 4, PEDESTRIAN VOLUME

Requirements: This warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. It shall not be applied at locations where the distance to the nearest traffic signal or stop sign controlling the street that pedestrians desire to cross is less than 300 feet.

Either criterion A or criterion B is satisfied.

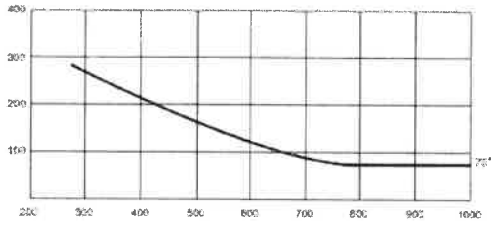
A: For each of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

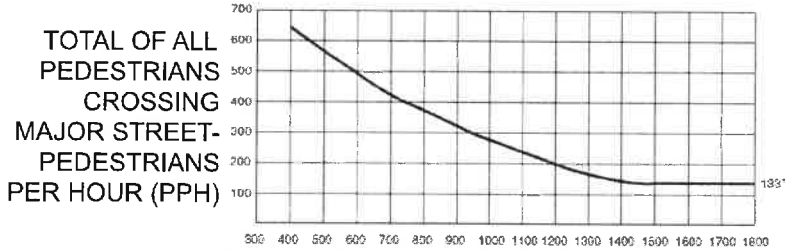
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

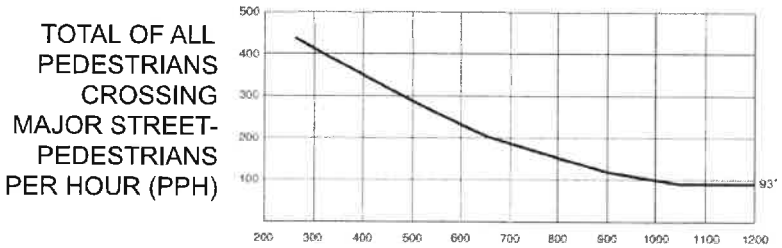
B: For 1 hour (any four consecutive 15-minute periods) of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-7

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

If the speed on major street exceeds 40 mph. or if population is less than 10.000. Figure 4C-6 or 4C-8 may be used.

Warrant 4 Met? ☐ Yes ☐ No ☑ Does not apply

23 USC §409 Documents
NDDOT Reserves All Objections

WARRANT 5, SCHOOL CROSSING

Requirements: This warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant. the word "schoolchildren" includes elementary through high school students.

The warrant is satisfied if all three of the criteria are satisfied.

Criteria	Satisfied? Yes	No
During the time period with schoolchildren are using the crossing: Gaps < Number of minutes	☐	☐
There are a minimum of 20 schoolchildren during the highest crossing hour.	☐	☐
The nearest traffic signal along the major road is located more than 300 ft away. Or. the nearest traffic signal is within 300 ft but the proposed traffic signal will not restrict the progressive movement of traffic.	☐	☐

Warrant 5 Met? ☐ Yes ☐ No ☑ Does not apply

WARRANT 6, COORDINATED SIGNAL SYSTEM

Requirements: The warrant is satisfied if either criteria is satisfied. This warrant should not be applied when the resulting signal spacing would be less than 1000 ft.

Criteria	Satisfied? Yes	No
On a one-way street or a street that has traffic predominantly in one direction. the adjacent signals are so far apart that they do not provide the necessary degree of vehicular platooning.	☐	☐
On a two-way street. adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.	☐	☐

Warrant 6 Met? ☐ Yes ☐ No ☑ Does not apply

WARRANT 7, CRASH EXPERIENCE

Requirements: The warrant is satisfied if all three of the criteria are satisfied.

	Criteria	Hour	Satisfied? Yes	No
One of the warrants to the right is met:	Warrant 4.1 at 80% of volume requirements: 80 ped/hr for 4 hrs or 152 ped/hr for 1 hr		☐	☐
	Warrant 1. Condition A (80% satisfied)		☐	☐
	Warrant 1. Condition B (80% satisfied)		☐	☐
Adequate trial of other remedial measures has failed to reduce crash frequency.		Measures Tried	☐	☐
Five or more reported crashes. of types susceptible to correction by signal control. have occurred within a 12 month period.		Number of Crashes	☐	☐

Warrant 7 Met? ☐ Yes ☐ No ☑ Does not apply

23 USC §409 Documents
NDDOT Reserves All Objections

WARRANT 8, ROADWAY NETWORK:

Requirements: A "major route" as used in this signal warrant shall have at least one of the following characteristics:

Characteristics of a Major Route	Satisfied? Yes	No
Part of the street or highway system that serves as a principal roadway network for through traffic flow	☐	☐
Rural or suburban highway outside of, entering, or traversing a city	☐	☐
Appears as a major route on an official plan	☐	☐

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

Criteria				Satisfied? Yes	No
1. Both of the criteria to the right are met.	a. Total entering volume of at least 1,000 veh/hr during typical weekday peak hour.	Entering volume:		☐	☐
	b. Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.	Warrant(s) satisfied:		☐	☐
2. Total entering volume of at least 1,000 veh/hr for each of any 5 hours of a non-normal business day (Sat. or Sun.)		Hour	Volume	☐	☐

Warrant 8 Met? ☐ Yes ☐ No ☑ Does not apply

WARRANT 9, INTERSECTION NEAR A GRADE CROSSING

Requirements: This warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Both condition A and condition B is satisfied.

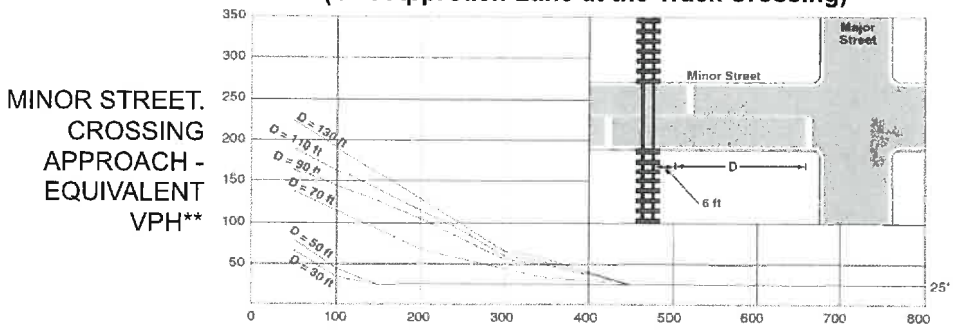
Criteria	Satisfied? Yes	No
A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach.	☐	☐
B. During the highest traffic volume hour during which rail traffic use the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13	☐	☐

Warrant 9 Continued on next page

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 9, CONTINUED

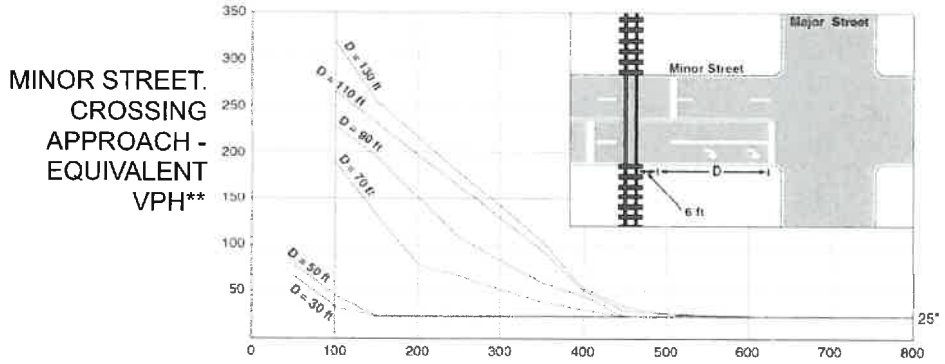
~~Figure 4C-9. Warrant 9, Intersection near a Grade Crossing~~
(One Approach Lane at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Figure 4C-10. Warrant 9, Intersection near a Grade Crossing
(Two or More Approach Lanes at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Warrant 9 Met? ☐ Yes ☐ No ☑ Does not apply

~~CONCLUSION~~

Warrants Satisfied
2014 - 2, 3
2019 - 2, 3
2025 - 2, 3

Signal Warranted ☑ Yes ☐ No

Remarks: Less than 10,000 population used 70% factor Saturday volumes
Needs signal
Weekday volumes are less

TRAFFIC CONTROL STUDY - WARRANTS FOR TRAFFIC SIGNALS

North Dakota Department of Transportation. Programming Division
SFN 7924 (Rev. 02-2013)

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

Date	Prepared by	City	Analysis Year
	KDH		2014

		Speed Limit (mph)	Number of Lanes
Major Road	6/4/14		
Minor Road	SR-39	30	1
	Valley Drive	30	1

Minor road right-turn traffic excluded from the analysis because there is an exclusive right turn lane and right-turn traffic enters the Major Road with minimal conflict: ☐ Yes ☑ No

1. Posted or 85th-percentile speed of major road traffic is > 40 mph: ☑ Yes ☑ No
2. In built-up area of isolated community < 10.000 population: ☐ Yes ☑ No

If question 1 or 2 is answered yes then use 70% volume criteria: ☑ 70% ☑ 100%

WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Requirements: Either Condition A (Minimum Vehicular Volume) or Condition B (Interruption of Continuous Traffic) is satisfied to 100% of the stated volumes for each of any 8 hours of an average day.
Or: Both Condition A and Condition B are satisfied to 80% of the stated volumes for each of any 8 hours of an average day.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

DOES NOT MEET

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B - Interruption of Continuous Traffic

DOES NOT MEET

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10.000

	8 Highest Hour Volumes							
	1	2	3	4	5	6	7	8
Both Approaches	556	600	697					
Major Road								
Highest Approach	163	169	159					
Minor Road								

SAME FOR 2019 & 2025

Warrant 1 Met? ☐ Yes ☑ No ☐ Does not apply

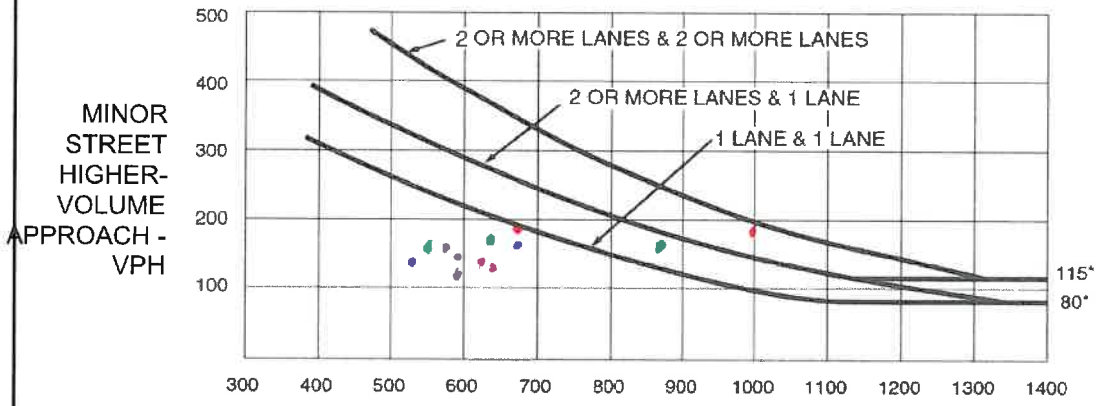
2019 - NO
2025 - NO

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Requirements: Plot four highest hour volumes on the applicable figure below. If four points lie above the applicable curve then the warrant is satisfied.

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

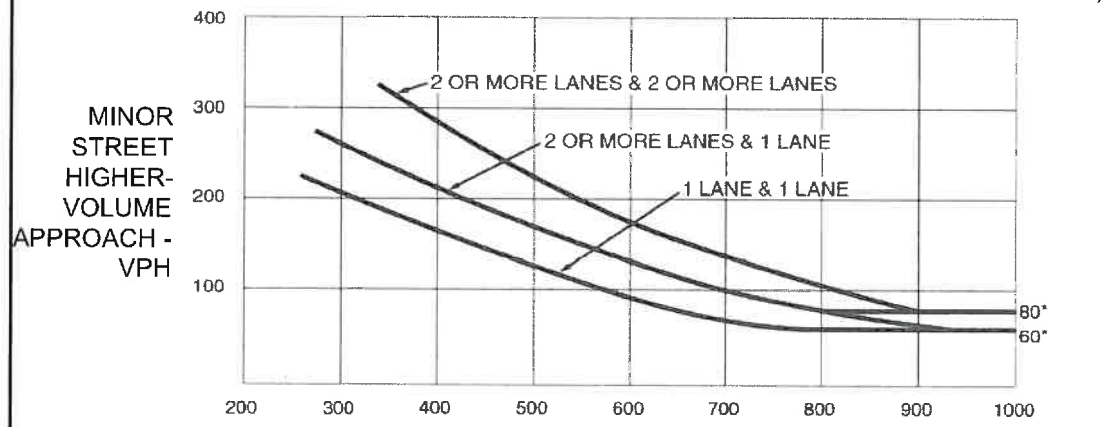


2014 - NO
2019 - NO
2025 - NO

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

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 2 Met? ☐ Yes ☑ No ☐ Does not apply

2019 NO
2025 NO

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 3, PEAK HOUR

Requirements: This signal warrant shall only be applied in unusual cases. Such cases include, but are not limited to, office complexes, manufacturing plants, industrial complexes, or high occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

Unusual Condition

~~SKI SEASON~~

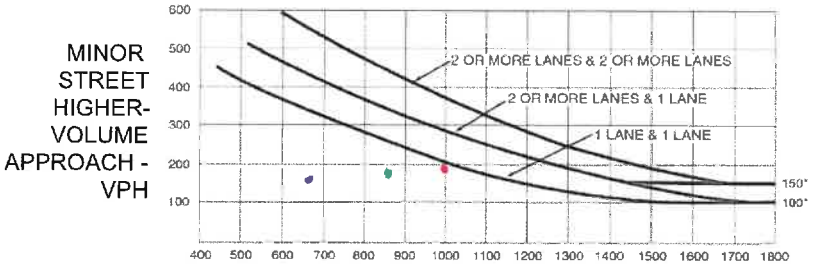
Either Condition A or Condition B is satisfied.

Condition A: The condition is satisfied if all three of the criteria are satisfied.

Criteria	Criteria Met If	Peak Hour Value	Satisfied? Yes	No
Delay on Minor Approach (veh-hr)	~~4 veh-hr for 1 lane approach or~~ 5 veh-hr for two-lane approach		☐	☑
Volume on Minor Approach (veh/hr)	~~100 veh/hr for one moving lane of traffic.~~ or 150 veh/hr for two lanes		☑	☐
Total Entering Volume (veh/hr)	~~650 veh/hr for 3 approaches~~ or 800 veh/hr for 4 or more		☑	☐

Condition B: Plot peak hour volumes on the applicable figure below. These conditions exist for the same 1 hour (and four consecutive 15-minute periods) of an average day. If the point is above the appropriate line, then the warrant is satisfied.

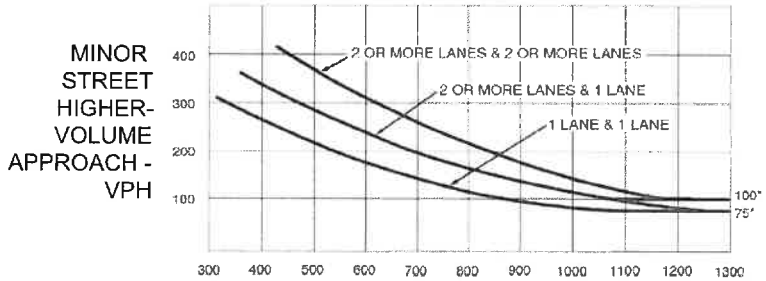
Figure 4C-3. Warrant 3, Peak Hour



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

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3 Met? ☐ Yes ☑ No ☐ Does not apply

2014 - NO
2019 - NO
2019 - NO

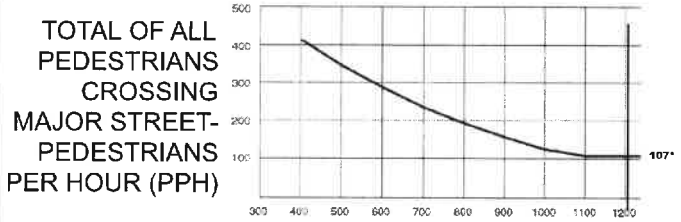
WARRANT 4, PEDESTRIAN VOLUME

Requirements: This warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. It shall not be applied at locations where the distance to the nearest traffic signal or stop sign controlling the street that pedestrians desire to cross is less than 300 feet.

Either criterion A or criterion B is satisfied.

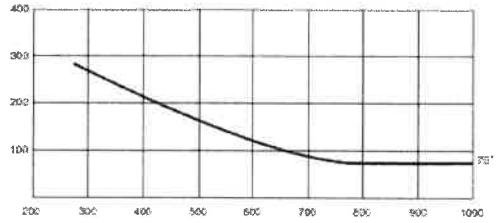
A: For each of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



*Note: 107 pph applies as the lower threshold volume.

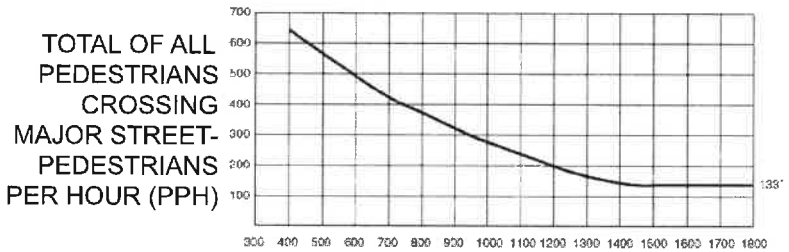
Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

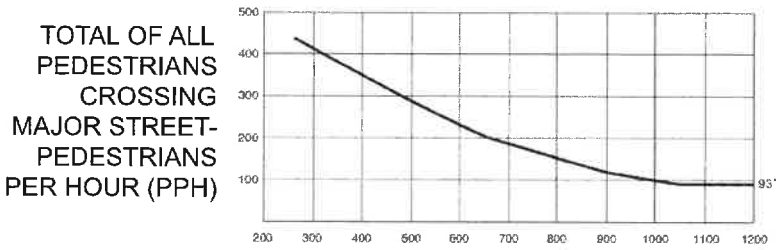
B: For 1 hour (any four consecutive 15-minute periods) of any 4 hours of an average day. the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-7

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



* Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

If the speed on major street exceeds 40 mph. or if population is less than 10.000. Figure 4C-6 or 4C-8 may be used.

Warrant 4 Met? ☐ Yes ☐ No ☑ Does not apply

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 5, SCHOOL CROSSING

Requirements: This warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant. the word "schoolchildren" includes elementary through high school students.

The warrant is satisfied if all three of the criteria are satisfied.

Criteria	Satisfied? Yes	No
~~During the time period with schoolchildren are using the crossing:~~ Gaps < Number of minutes	☐	☐
~~There are a minimum of 20 schoolchildren during the highest crossing hour.~~	☐	☐
~~The nearest traffic signal along the major road is located more than 300 ft away.~~ Or. the nearest traffic signal is within 300 ft but the proposed traffic signal will not restrict the progressive movement of traffic.	☐	☐

Warrant 5 Met? ☐ Yes ☐ No ☑ Does not apply

WARRANT 6, COORDINATED SIGNAL SYSTEM

Requirements: The warrant is satisfied if either criteria is satisfied. This warrant should not be applied when the resulting signal spacing would be less than 1000 ft.

Criteria	Satisfied? Yes	No
On a one-way street or a street that has traffic predominantly in one direction. the adjacent signals are so far apart that they do not provide the necessary degree of vehicular platooning.	☐	☐
On a two-way street. adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.	☐	☐

Warrant 6 Met? ☐ Yes ☐ No ☑ Does not apply

~~WARRANT 7, CRASH EXPERIENCE~~

Requirements: The warrant is satisfied if all three of the criteria are satisfied.

Criteria		Hour	Satisfied? Yes	No
One of the warrants to the right is met:	~~Warrant 4.1 at 80% of volume requirements: 80 ped/hr for 4 hrs or 152 ped/hr for 1 hr~~		☐	☑
	~~Warrant 1. Condition A (80% satisfied)~~		☐	☑
	~~Warrant 1. Condition B (80% satisfied)~~		☐	☑
~~Adequate trial of other remedial measures has failed to reduce crash frequency.~~		Measures Tried	☐	☑
~~Five or more reported crashes. of types susceptible to correction by signal control. have occurred within a 12 month period.~~		Number of Crashes	☐	☑

~~Warrant 7 Met?~~ ☐ ~~Yes~~ ☐ ~~No~~ ☑ ~~Does not apply~~

23 USC §409 Documents
NDDOT Reserves All Objections

WARRANT 8, ROADWAY NETWORK:

Requirements: A "major route" as used in this signal warrant shall have at least one of the following characteristics:

Characteristics of a Major Route	Satisfied? Yes	No
Part of the street or highway system that serves as a principal roadway network for through traffic flow	☐	☐
Rural or suburban highway outside of, entering, or traversing a city	☐	☐
Appears as a major route on an official plan	☐	☐

The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:

Criteria			Satisfied? Yes	No
1. Both of the criteria to the right are met.	a. Total entering volume of at least 1,000 veh/hr during typical weekday peak hour.	Entering volume:	☐	☐
	b. Five-year projected volumes that satisfy one or more of Warrants 1. 2. or 3.	Warrant(s) satisfied:	☐	☐
2. Total entering volume of at least 1,000 veh/hr for each of any 5 hours of a non-normal business day (Sat. or Sun.)		Hour / Volume	☐	☐

Warrant 8 Met? ☐ Yes ☐ No ☑ Does not apply

WARRANT 9, INTERSECTION NEAR A GRADE CROSSING

Requirements: This warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Both condition A and condition B is satisfied

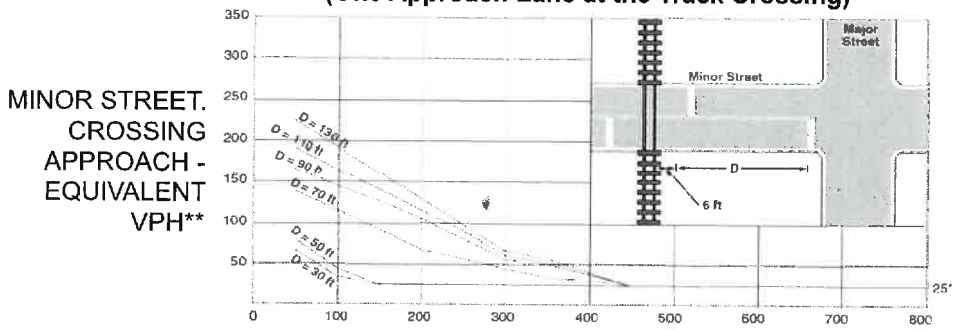
Criteria	Satisfied? Yes	No
A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach.	☐	☐
B. During the highest traffic volume hour during which rail traffic use the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13	☐	☐

Warrant 9 Continued on next page

~~23 USC §409 Documents~~
NDDOT Reserves All Objections

WARRANT 9, CONTINUED

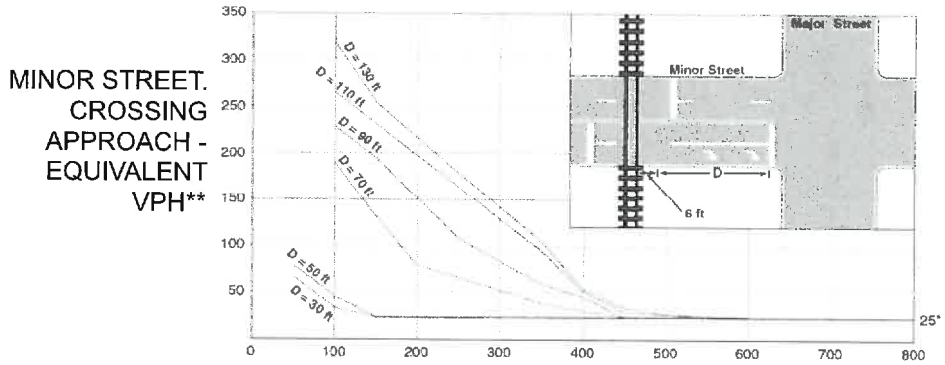
~~Figure 4C-9. Warrant 9, Intersection near a Grade Crossing~~
(One Approach Lane at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Figure 4C-10. Warrant 9, Intersection near a Grade Crossing
(Two or More Approach Lanes at the Track Crossing)



MAJOR STREET -- TOTAL OF BOTH APPROACHES -- VEHICLES PER HOUR (VPH)

* Note: 25 vph applies as the lower threshold volume
** Note: VPH after applying the adjustment factors in Tables 4C-2. 4C-3. and/or 4C-4. if appropriate

Warrant 9 Met? ☐ Yes ☑ No ☑ Does not apply

~~CONCLUSION~~

Warrants Satisfied
NONE

Signal Warranted ☐ Yes ☑ No

Remarks
2014
NO SIGNAL WARRANTED FOR SATURDAY VOLUMES
WEEKDAY VOLUMES ARE EVEN LESS.

2019
2025