



**ALDRIDGE TRANSPORTATION CONSULTANTS, LLC**  
*Advanced Transportation Planning and Traffic Engineering*

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September 16, 2018

Mr. Tom Lemon  
Vice President - Real Estate  
**MDC Holdings, Inc. – Richmond American Homes**  
4350 S. Monaco St.  
Denver CO 80237

Re: Traffic Impact Study  
The Oaks at Castle Rock

Dear Mr. Lemon

Aldridge Transportation Consultants (ATC) is pleased to present this traffic impact study regarding the proposed development of a residential community containing 247 single-family homes in two Filings (#2 & #3). Filing 2 is located on the south side of Plum Creek Parkway and Filing 3 is located on west side of Ridge Road approximately 600 feet south of Mikelson Blvd.

ATC is professional service firm specializing in traffic engineering and transportation planning. ATC's principal, John M.W. Aldridge, is a Colorado licensed professional engineer. In the past 20 years, ATC has prepared over 1,000 traffic impact studies, designed over 100 traffic signals, and has provided expert witness testimony on engineering design and access issues on multi-million dollar interchange and highway projects in Kansas and Colorado.

ATC appreciates the opportunity to be of service. Please call if you have any questions. We can be reached at 303-703-9112.

Respectfully submitted,  
**Aldridge Transportation Consultants, LLC**

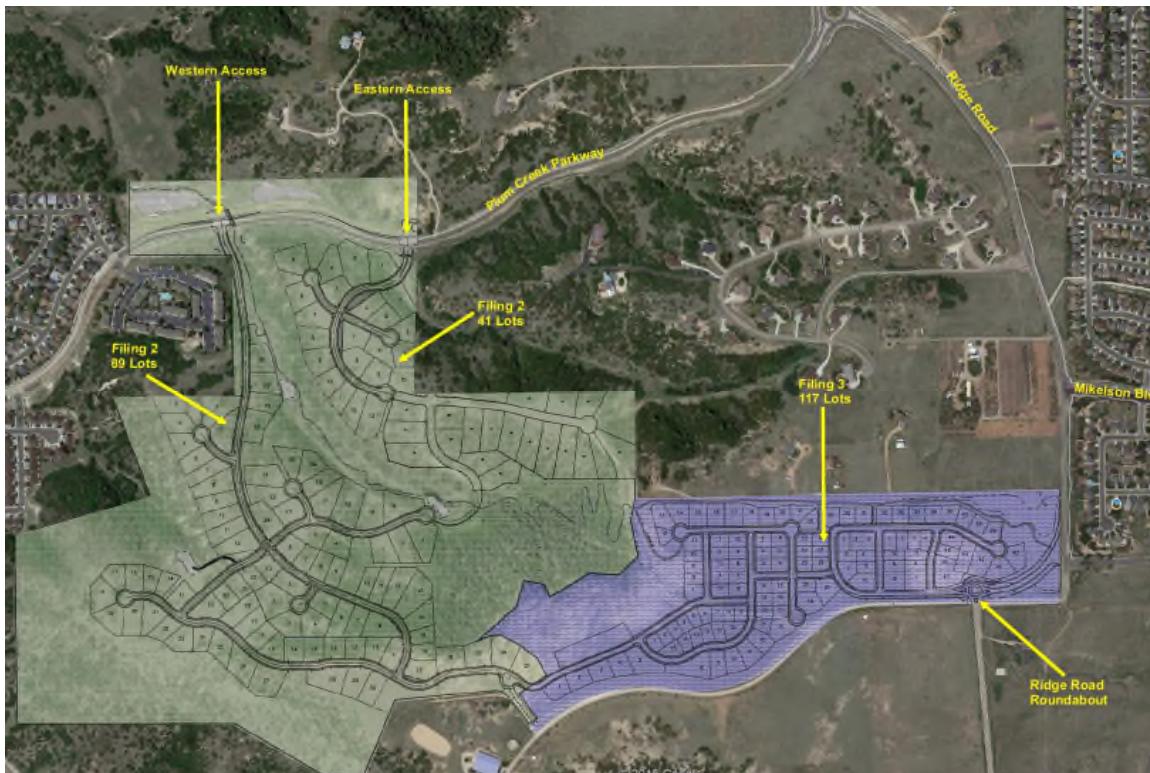
John M.W. Aldridge, P.E.  
Principal





## PROJECT DESCRIPTION

This study provides an analysis and evaluation of the traffic impact caused by the development of a new residential community consisting of 247 single family homes in Castle Rock. Figure 1 shows the location of the site, site plan with Filings 2 and 3, access locations, and the adjacent streets and intersections. The primary focus of the study is to determine the geometric configuration of the intersections on Plum Creek Parkway and if a traffic signal warrant would be met upon build-out or triggered with a certain number of homes prior to build-out.



**Figure 1 Location and Site Plan**

## ACCESS LOCATIONS & TYPE

Filing 2 will have two primary access locations on Plum Creek Parkway. The western access is approximately 700 feet east of Eaton St. and the eastern access will be approximately 1150 feet east of the western access. The western access will be full-movement and potentially signalized. The eastern access will also be full-movement, but two-way stop sign controlled. Filing 3 will have one primary access from a new roundabout on Ridge Road. Ridge Road will be reconfigured from a right angle to a curved roadway from approximately Appleton Way to the new roundabout. From the roundabout to the south, Ridge Road will stay on its existing alignment. The filings will be



connected by an internal roadway system which will provide Filing 3 with access to Plum Creek Parkway through Filing 2 and vice versa.

#### EXISTING CONDITIONS

Plum Creek Parkway is a two-lane undivided Principal Arterial. It currently carries 8,500 ADT in this section. It is posted at 40 mph. The 85<sup>th</sup> percentile speed, however, is 50 mph eastbound and 45 mph westbound. In the appendix there is a speed study that confirms the findings.

Ridge Road is an undivided two-lane Minor Arterial that carries approximately 7,500 ADT north of Mikelson Blvd. and considerably less at approximately 300 ADT south of Mikelson Blvd. The intersection of Mikelson Blvd. and Ridge Road is two-way stop sign controlled with Mikelson Blvd. stopped. Ridge Road is posted at 45 mph north of Mikelson Blvd. and 35 mph to the south. Mikelson Blvd. is a four-lane Collector with a raised landscaped median. It carries approximately 6,500 ADT in this area. It is posted at 35 mph. Lantern Trail is a two-lane undivided Collector. It carries approximately 1,500 ADT on the north leg and 1,000 ADT on the south leg. It is posted at 30 mph.

At about 3,000 feet north of Mikelson Blvd. there is a three-legged, single ring roundabout that intersects Ridge Road with Plum Creek Parkway. Plum Creek Parkway carries approximately 6,800 ADT at the roundabout, Ridge Road to the north of it carries 6,700 ADT and to the south about 8,000 ADT.

The traffic movement counts for the AM and PM peak hours were taken on a Tuesday, Wednesday, and Thursday during the weeks of January 9 and January 16, 2017. A 24-hour count of volume, speed, and vehicle classification was taken on Tuesday, August 28, 2018. The traffic count worksheets are found in the appendix. Also, the Synchro graphics on Figures 2 and 3 for the Existing AM and PM peaks hours depict the traffic counts, respectively.

#### PROPOSED CONDITIONS

The following table presents the estimated trip generation based on the rates and values in the *10<sup>th</sup> Edition of the ITE Trip Generation Manual*. The proposed use is 247 single-family homes. The table shows the average daily traffic (ADT) and the AM and PM peak-hour trip generation.

**Table 1 Trip Generation**

Trip Generation Worksheet									
ITE CODE	LAND USE	UNIT	QUANTITY	ADT	AM		PM		
					IN	OUT	IN	OUT	
210	Single Family Filing 2	DU	89	9.44	0.19	0.55	0.63	0.37	
				840	17	49	56	33	
210	Single Family Filing 2	DU	41	9.44	0.19	0.55	0.63	0.37	
				387	8	23	26	15	
210	Single Family Filing 3	DU	117	9.44	0.19	0.55	0.63	0.37	
				1104	22	64	74	43	
<b>Total Trips</b>				<b>2332</b>	<b>47</b>	<b>136</b>	<b>156</b>	<b>91</b>	



### TRIP DISTRIBUTION & ASSIGNMENT

The trip distribution and assignment assumes that from the small parcel of 41 homes in Filing 2 that all traffic will enter/exit Plum Creek Parkway at the eastern access with 70 percent to/from the west (Town and I-25) and 30 percent to/from the east (Ridge Road). At the western access, of the combined 89 homes in Filing 2 and 117 in Filing 3, 150 will enter/exit Plum Creek Parkway as it is the more direct route to the Town and I-25. The remaining 67 will enter/exit at the roundabout on Ridge Road for points east. All the traffic through the roundabout is assigned to and from the northern leg of Ridge Road. To the south on Ridge Road there no employment or residential areas that would attract a consistent volume of traffic daily. Similarly, no traffic was assigned to Appleton Way through the Castlewood Ranch Estates. Any traffic using this route to Lantern Trail would be random and unpredictable. A modest amount of traffic was assigned to Mikelson Blvd. which is a ring road through Founder's Village. At the roundabout, the traffic was assigned to match the current daily volumes on Ridge Road and Plum Creek Parkway.

### FUTURE CONDITIONS

The *2017 Castle Rock Transportation Master Plan* indicates that Plum Creek Parkway will be widened to a four-lane Major Arterial standard by 2022. It is forecast to carry 9,900 ADT by 2030 and by 2040, 10,700 ADT. By full-build out, Ridge Road will become a two-lane Minor Arterial. The plan does not provide a forecast volume on Ridge Road south of Plum Creek Parkway.

### EVALUATION

ATC uses Synchro v.10 for operations analyses. The Synchro methodology is based on the Highway Capacity Manual 6<sup>th</sup> Edition (HCM). The Synchro HCM reports are attached for reference. The chart summarizes the existing and forecast LOS (level of service). LOS is letter rating from A to F. LOS A indicates free-flow traffic conditions and no delay at intersections. LOS F is heavy traffic congestion with significant delay. LOS is provided for the overall operations at signalized intersections. LOS D is generally the benchmark for acceptable signalized intersection operations during the weekday peak hours. The LOS rating for unsignalized intersections is provided by the critical movement - not the overall - which is generally a left turn from the minor approach. Caution must be used when evaluating the LOS at unsignalized intersections particularly when LOS F is shown. In this case of an LOS F, the HCM<sup>1</sup> suggests that other evaluation measures should be considered such as the volume over capacity ratio and 95<sup>th</sup> percentile queue length to make the most effective traffic control decision. LOS F at unsignalized intersections is generally considered normal for the weekday peak hour.

The appendix contains the Synchro graphics with the geometric configuration of the intersections and movement volumes and the Synchro reports providing the LOS, seconds of delay, and other pertinent information. Table 2 presents a summary of the LOS analysis.

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<sup>1</sup> Highway Capacity Manual 2010 page 19-40

**Table 2 LOS Analysis**

Intersection	Level of Service Analysis							
	LOS and SECONDS OF DELAY							
	Existing		2023 Plus SG		2040 Background		2040 Total	
AM	PM	AM	PM	AM	PM	AM	PM	
Plum Creek/Ridge Road (Roundabout)	A 6.0	A 7.1	A 7.7	A 8.6	A 6.0	A 7.3	A 7.5	A 9.0
Ridge Road/Mikelson	B 11.6	D 29.5	B 12.8	E 39.9	B 11.3	D 30.1	B 12.6	E 41.3
Mikelson/Lantern Trail	B 12.6	B 14.5	B 12.6	B 14.5	B 12.6	B 14.5	B 12.7	B 14.7
Ridge Road/Appleton Way	A 8.5	A 8.5	A 9.0	A 8.7	A 8.5	A 8.5	A 9.0	A 8.8
Ridge Road/No Name (Roundabout)	N/A	N/A	A 3.9	A 4.0	N/A	N/A	A 3.9	A 4.1
Western Access/Plum Creek Parkway	N/A	N/A	C/15.9	C/23.2	N/A	N/A	C/19.9	D/34.4
Eastern Access/Plum Creek Parkway	N/A	N/A	B/14.6	C/18.4	N/A	N/A	C/17.6	C/24.4

*Note the following analysis is from the November 2017 Traffic Study that focused on Filing 3 with 188 homes and no connection to Plum Creek Parkway through Filing 2. The volumes that would use the roundabout in Filing 3 and on Ridge Road would be significantly less with about 67 homes using the roundabout. As the LOS and delay are acceptable with 188 home analysis it will be even better with just 67 homes. Consequently, no reanalysis is necessary. The Synchro graphics and reports are attached for reference along with the traffic counts.*

The analysis shows that both roundabouts will operate at LOS A with virtually no delay in all the analysis periods. Ridge Road and Appleton Way will also operate at LOS A in all periods. Mikelson Blvd. and Lantern Trail will operate at LOS B in all analysis periods. Ridge Road and Mikelson Blvd. is the only intersection in the study area to experience LOS D and E in the existing and future PM peak hours. The LOS E is based on the control delay of the westbound left turn movement. However, the movement is only 9 vehicles per hour and as such is an imprecise representation of the overall intersection operation. When situations like this occur, per the HCM 2010, other evaluation measures should be considered to determine if this condition is acceptable. The capacity of the westbound left turn lane is 109 vehicles per hour, the volume over capacity ratio is .09, and the 95<sup>th</sup> percentile queue length is .3 vehicles. These results suggest that a queue of one vehicle will occur only occasionally on the westbound approach. Clearly, in this case, the LOS rating is superficial and fails to provide a reasonable analysis of the intersections design adequacy and operational efficiency. Moreover, the overall intersection control delay is only 7.4 seconds which indicates an overall LOS A condition. The intersection will operate acceptably, and no mitigation is required.

*The following analysis is new and considers the trip generation from 150 homes at the western access and 41 homes at the eastern access.*

The western and eastern accesses on Plum Creek Parkway will operate acceptably as unsignalized intersections in the 2023 and 2040 background and total conditions.

#### TRAFFIC SIGNAL WARRANTS

Traffic signal warrants are determined based on procedures and methodology promulgated by the *Manual on Uniform Traffic Control Devices, 2009 Edition and Updates*. There are nine warrants, but for this analysis only Warrants 1, 2, and 8, are applicable. Warrants 1 and 2 are volume warrants.



Warrant 1 is an eight-hour warrant where for 8 hours during the average weekday, certain threshold volumes on the major street and minor street approaches must be met. Warrant 2, is a four-hour warrant where for 4 hours again a certain threshold volume must be met on the major street and minor street approaches. Warrant 8 is the Roadway Network warrant which under certain circumstances a signal may be installed up to five years before the projected volume warrant is met.

The intersections qualify for the 70 percent reduction condition which is allowed when the critical approach speed is 45 mph or greater. Even though the posted speed is 40 mph (which would not qualify for the 70 percent condition) the observed 85<sup>th</sup> percentile speed is 50 mph in the eastbound direction and 45 mph in the westbound direction.

The directional split at each access is 70 percent to the west (left turn out) and 30 percent to the east (right turn out). Generally, the right turn out movement has less impact and consequently a deduction is taken from the total minor approach. In this case, however, no right turn out movement reduction was taken from the total approach volume.

The major street approaches are taken directly from the 24-hour volume machine counts. These were factored for background growth of 1.13 for the 2023 analysis and for the 2040 analysis a growth factor of 1.43 was applied. To forecast the hourly volume on minor street approaches, an established hourly rate from similar residential areas was applied. A comparison of the peak hour site generated traffic in the AM and PM peak hours indicated that the hourly rates matched. The site generated table indicated that 83 vehicles per hour would approach the intersection in the AM peak hour. The hourly rate for the warrant study shows 82 vehicles per hour on the approach in the AM peak hour.

The Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet was used to study the warrants. It matches the MUTCD requirements precisely, is easy to use, and provides a comprehensive summary. It is attached for reference. The study assumed the 2023 condition with a four-lane cross section and a 1.13 percent increase in traffic volume to be consistent with the forecasts in the 2017 Transportation Plan. Similarly, the 2040 condition assumed a 1.43 growth factor. The warrant analysis summary worksheets are attached in the appendix.

Note that an analysis of the eastern access was not conducted as the minor street approach is well below any of the warrant thresholds.

The warrant study for the western access reported that no warrants would be met in either design horizon, 2023 or 2040.



## MITIGATION

The current cross-section on Plum Creek Parkway is a two-lane undivided roadway. The *2017 Castle Rock Transportation Master Plan* shows that it will become a four-lane major arterial with a center landscaped median, bike lanes, and wide sidewalks. Per the plan and Castle Rock's Capital Improvement Program, this will take place by 2022 at a cost of \$3.1 million.



Each intersection will require a right turn deceleration lane and a left turn deceleration lane. Per the *Castle Rock Roadway Design Criteria Manual* at 40 mph, the lanes should consist of a 12:1 taper and storage. The storage length at the western access should be a minimum of 100 feet and at the eastern access, 50 feet. The northbound approach on each access should consist of a left turn lane and a 100-foot right turn lane.

## CONCLUSIONS/RECOMMENDATIONS

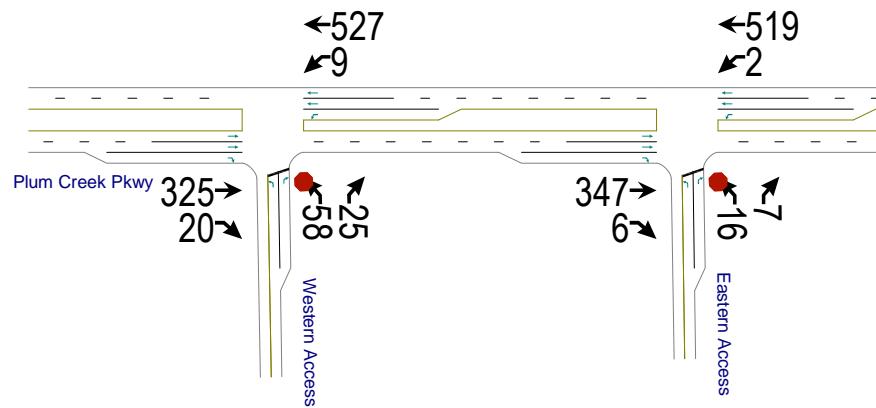
In conclusion, this study finds that the site-generated traffic from Filing 2 and 3 will not warrant traffic signal control at the western or eastern access on Plum Creek Parkway. Both intersections will operate acceptably (LOS D or better) in the 2023 and 2040 design horizons. The programmed widening of Plum Creek Parkway and recommended turn lanes will allow the site generated traffic to blend harmoniously with the existing and future traffic on the adjacent streets and intersections.

For Filing 3, the additional traffic will not occasion the need for any improvements to the existing geometry and traffic control excepting the programmed realignment of Ridge Road and construction of the new roundabout.

We appreciate the opportunity to be of service. Should you have any questions or concerns, please call me at 303-703-9112.

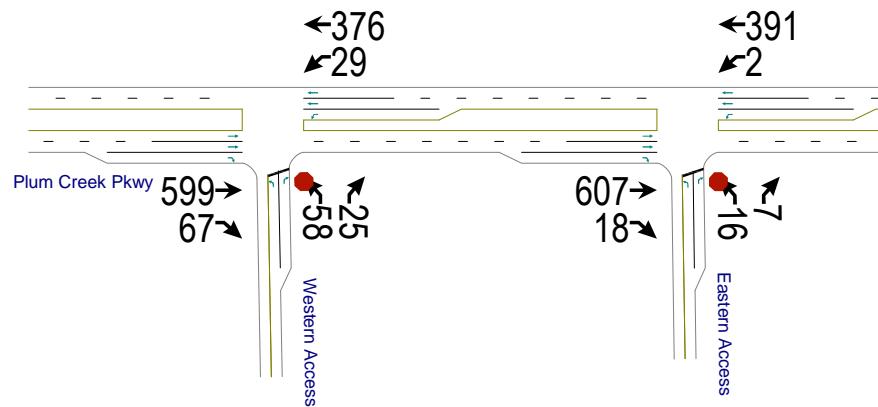
Respectfully submitted,  
**Aldridge Transportation Consultants, LLC**

John M.W. Aldridge, P.E.  
Principal



Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	288	20	9	466	58	25
Future Vol, veh/h	288	20	9	466	58	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	22	10	572	63	27
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	376	0	660	177
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1179	-	396	835
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1179	-	393	835
Mov Cap-2 Maneuver	-	-	-	-	393	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	720	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	14			
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	393	835	-	-	1179	-
HCM Lane V/C Ratio	0.16	0.033	-	-	0.008	-
HCM Control Delay (s)	15.9	9.5	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	307	6	2	459	16	7
Future Vol, veh/h	307	6	2	459	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	377	7	2	564	17	8
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	384	0	663	189
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	286	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1171	-	394	821
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	737	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1171	-	393	821
Mov Cap-2 Maneuver	-	-	-	-	393	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	737	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	13			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	393	821	-	-	1171	-
HCM Lane V/C Ratio	0.044	0.009	-	-	0.002	-
HCM Control Delay (s)	14.6	9.4	-	-	8.1	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-



Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	530	67	29	333	58	25
Future Vol, veh/h	530	67	29	333	58	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	651	73	32	409	63	27
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	724	0	920	326
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	874	-	270	670
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	874	-	260	670
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	752	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.7	19.4			
HCM LOS			C			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	260	670	-	-	874	-
HCM Lane V/C Ratio	0.242	0.041	-	-	0.036	-
HCM Control Delay (s)	23.2	10.6	-	-	9.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-

Intersection

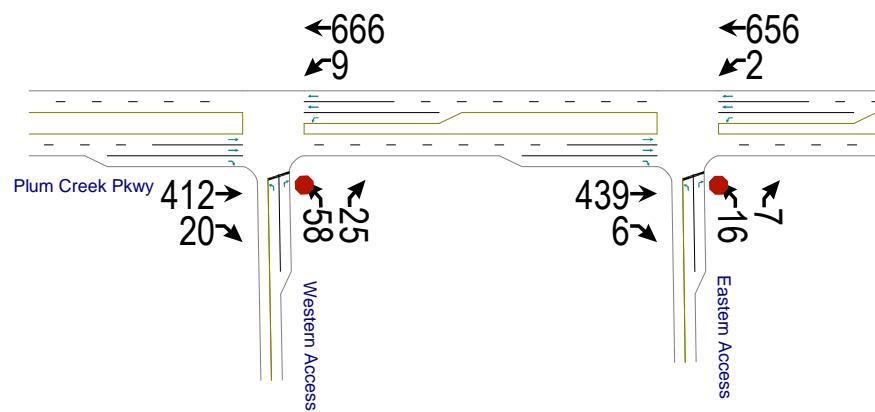
Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	537	18	2	346	16	7
Future Vol, veh/h	537	18	2	346	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	660	20	2	425	17	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	680	0	877 330
Stage 1	-	-	-	-	660 -
Stage 2	-	-	-	-	217 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	908	-	288 666
Stage 1	-	-	-	-	476 -
Stage 2	-	-	-	-	798 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	908	-	287 666
Mov Cap-2 Maneuver	-	-	-	-	287 -
Stage 1	-	-	-	-	475 -
Stage 2	-	-	-	-	798 -

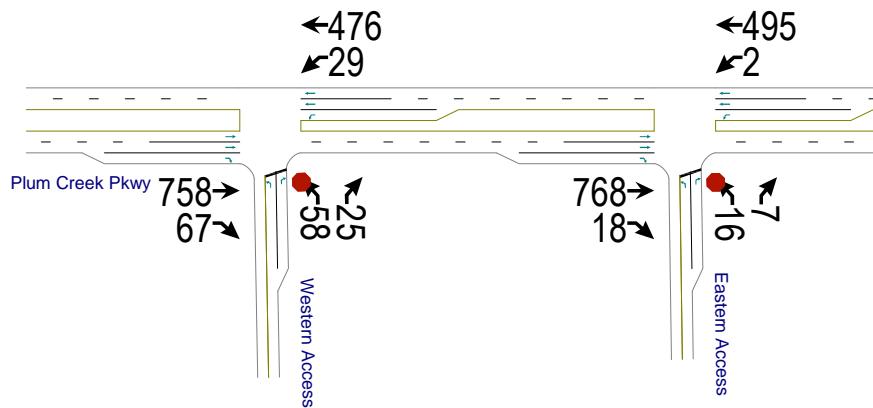
Approach	EB	WB	NB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	287	666	-	-	908	-
HCM Lane V/C Ratio	0.061	0.011	-	-	0.002	-
HCM Control Delay (s)	18.4	10.5	-	-	9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-



Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	288	20	9	466	58	25
Future Vol, veh/h	288	20	9	466	58	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	448	22	10	724	63	27
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	470	0	830	224
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1088	-	308	779
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1088	-	305	779
Mov Cap-2 Maneuver	-	-	-	-	305	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	660	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	16.9			
HCM LOS			C			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	305	779	-	-	1088	-
HCM Lane V/C Ratio	0.207	0.035	-	-	0.009	-
HCM Control Delay (s)	19.9	9.8	-	-	8.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	307	6	2	459	16	7
Future Vol, veh/h	307	6	2	459	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	477	7	2	713	17	8
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	484	0	838	239
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	361	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1075	-	305	762
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1075	-	304	762
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	676	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	15.2			
HCM LOS			C			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	762	-	-	1075	-
HCM Lane V/C Ratio	0.057	0.01	-	-	0.002	-
HCM Control Delay (s)	17.6	9.8	-	-	8.4	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-



Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	530	67	29	333	58	25
Future Vol, veh/h	530	67	29	333	58	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	824	73	32	518	63	27
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	897	0	1147	412
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	753	-	192	589
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	706	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	753	-	184	589
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	706	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.6	27.5			
HCM LOS			D			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	184	589	-	-	753	-
HCM Lane V/C Ratio	0.343	0.046	-	-	0.042	-
HCM Control Delay (s)	34.4	11.4	-	-	10	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↖	↗
Traffic Vol, veh/h	537	18	2	346	16	7
Future Vol, veh/h	537	18	2	346	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	835	20	2	538	17	8
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	855	0	1108	418
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	781	-	204	584
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	781	-	203	584
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	748	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	20.4			
HCM LOS			C			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	584	-	-	781	-
HCM Lane V/C Ratio	0.086	0.013	-	-	0.003	-
HCM Control Delay (s)	24.4	11.2	-	-	9.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-

# Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Plum Creek - West Entrance

County: Douglas

Town: Castle Rock

Major Street: Plum Creek

Minor Street: West Entrance

Critical Approach Speed: 50 mph

Critical Approach Speed: 30 mph

Lanes: 2 or more lanes

Lanes: 1 lane

% Right Turns Included

From North (SB) 0%

In built-up area of isolated community of < 10,000 population? No

From East (WB) 0%

Total number of approaches at intersection? 3

From South (NB) 100%

If it is a "T" intersection, inflate minor threshold to 150%? No

From West (EB) 0%

Manually set volume level? No

**Analysis based on PROJECTED volume data.**

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
2023	Yes	6	AM	10	PM

<b>Warrant Evaluation Summary</b>		<b>Warrant Met:</b>
<b>Warrant 1: Eight - Hour Vehicular Volume</b>		No
Condition A: Minimum Vehicular Volume		No
Condition B: Interruption of Continuous Traffic		No
Condition C: Combination: 80% of A and B		No
<b>Warrant 2: Four-Hour Volume</b>		No
<b>Warrant 3: Peak Hour Volume</b>		No
<b>Warrant 4: Pedestrian Volume</b>		N/A
Criterion A: Four-Hour		
Criterion B: Peak-Hour		
<b>Warrant 5: School Crossing</b>		N/A
<b>Warrant 6: Coordinated Signal System</b>		N/A
<b>Warrant 7: Crash Experience</b>		N/A
<b>Warrant 8: Roadway Network</b>		No
<b>Warrant 9: Intersection Near a Grade Crossing</b>		N/A

## Warrant Analysis Conducted By:

Name: John Aldridge

Agency: Aldridge Transportation Consultants

Date: 9/7/2018

## Warrant 1: Eight - Hour Vehicular Volume

70%

**Warrant Evaluated? Yes**

Condition A :		
Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	0

**Satisfied? No**

Condition B:		
Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	2	4

**Satisfied? No**

Condition C:		
Combination of A & B at 56%		

**Satisfied? No**

**Warrant Satisfied? No**

**Manually Set To: No**

6:00 AM		Enter Start Time (Military Time) (HH:MM)		
Time Period	From	To	Major Road: Both App. (VPH)	Minor Road: High App. (VPH)
1	6:00	7:00	433	38
2	7:00	8:00	705	77
3	8:00	9:00	545	82
4	9:00	10:00	437	50
5	10:00	11:00	385	36
6	11:00	12:00	413	46
7	12:00	13:00	429	35
8	13:00	14:00	411	32
9	14:00	15:00	470	39
10	15:00	16:00	644	40
11	16:00	17:00	797	56
12	17:00	18:00	869	39
13	18:00	19:00	688	46
14	19:00	20:00	416	23
15	20:00	21:00	296	12
16	21:00	22:00	205	11

Total	471
	782
	627
	487
	421
	459
	464
	443
	509
	684
	853
	908
	734
	439
	308
	216

## Warrant 2: Four-Hour Volume

70%

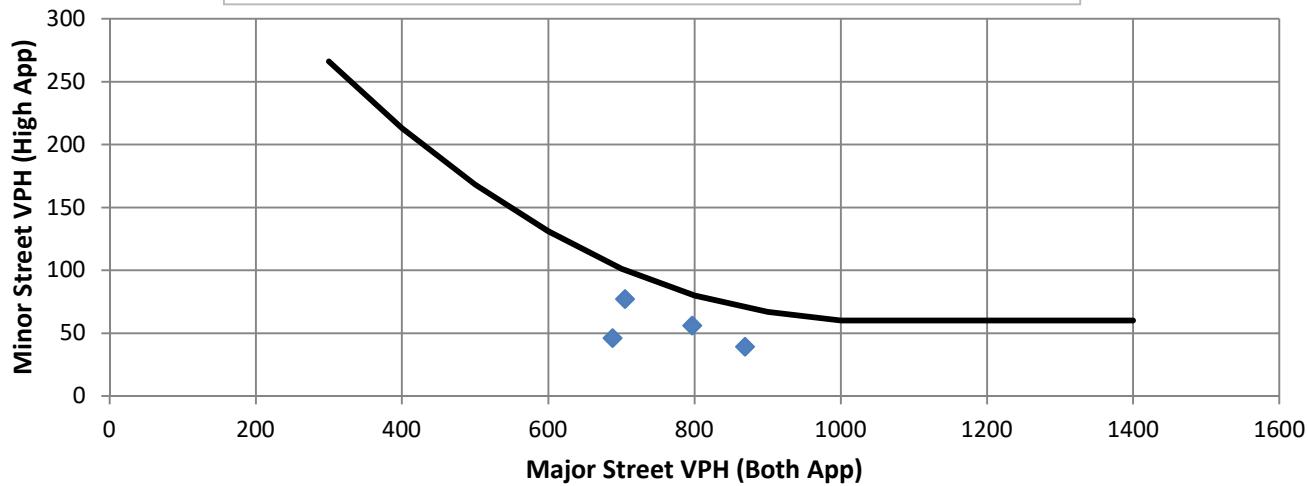
**Warrant Evaluated? Yes**

**Warrant Satisfied? No**

**Manually Set To: No**

Hour Start	7:00	16:00	17:00	18:00
Major Road Vol.	705	797	869	688
Minor Road Vol.	77	56	39	46

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



## Warrant 3: Peak Hour Volume

70%

**Warrant Evaluated? Yes**

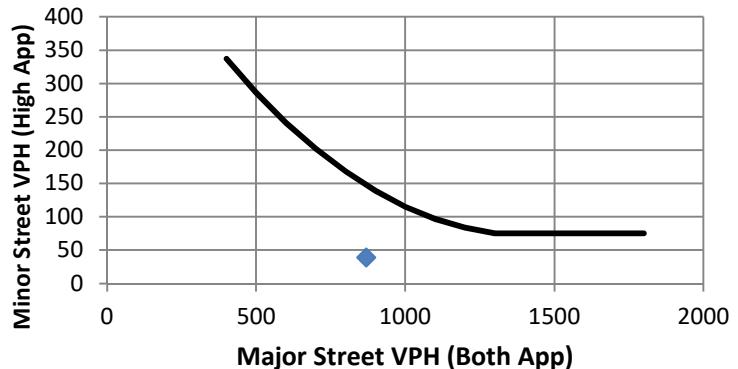
Condition justifying use of warrant:

Criteria	Met?
Delay on Minor Approach	4
Volume on Minor Approach	100
Total Entering Volume (veh/h)	650

**Warrant Satisfied? No**

**Manually Set To:**

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



**Manually Set Peak Hour? No**

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
17:00	869	39

## Warrant 4: Pedestrian Volume

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

**Criterion A: Four Hour**

Hour (Start)	Pedestrian Volume	Major Road Vol.
0:00	0	#N/A

No

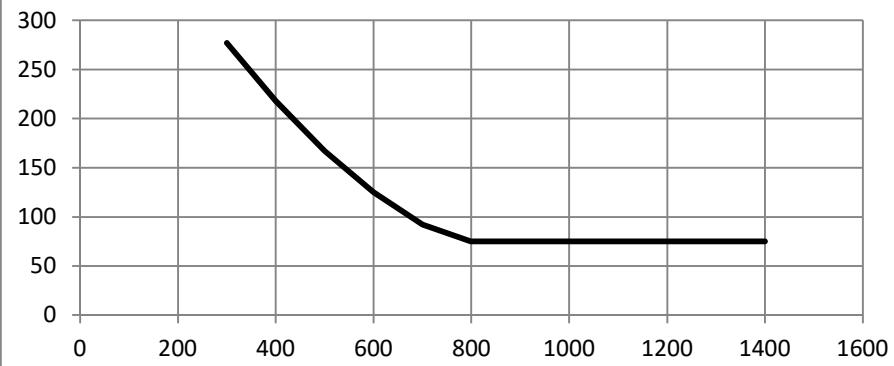
No

**Manually Set Major Rd Vol?**

Avg. walk speed less than 3.5 ft/s?

**Criterion A Satisfied?**

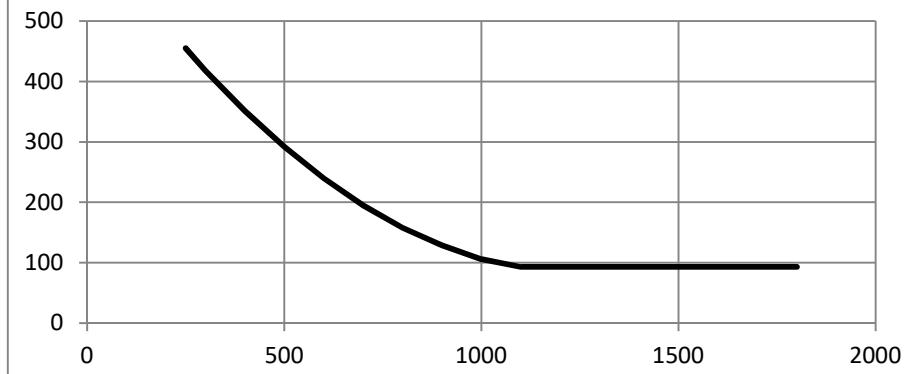
Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



**Criterion B: Peak Hour**

Peak Hour	Pedestrian Vol.	Major Road Vol.
#N/A	#N/A	#N/A

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



**Criterion B Satisfied?**

## Warrant 5: School Crossing

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	There are a MINIMUM of 20 school children during the highest crossing hour.	
2	There are fewer adequate gaps in the major road traffic stream during the period when the school children are using the crossing than the number of minutes in the same period.	
3	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 6: Coordinated Signal System

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	Signal spacing > 1000 ft	
2	On a one-way road or a road that has traffic predominantly in one direction, the adjacent signals are so far apart that they do not provide the necessary degree of vehicle platooning.	
3	On a two-way road, adjacent signals do not provide the necessary degree of platooning and the proposed and the adjacent signals will collectively provide a progressive operation.	

## Warrant 7: Crash Experience

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	Adequate trial of other remedial measures has failed to reduce crash frequency.  Measures Tried:		Met?	Fulfilled?
2	Five or more reported crashes, of types susceptible to correction by signal, have occurred within a 12 month period.	# of crashes per 12 months		
3	Warrant 1, Condition A (80%)	No	#N/A	#N/A
	Warrant 1, Condition B (80%)	No		
	Warrant 4, Criterion A (80%)	#N/A		
	Warrant 4, Criterion B (80%)	#N/A		

## Warrant 8: Roadway Network

70%

**Warrant Evaluated? Yes**

**Warrant Satisfied? No**

**Manually Set To:**

Fulfilled?

**Criteria**

1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour		908	No	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.			No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business day (Sat. or Sun.)	Hour			
		Volume			

**Characteristics of Major Routes - Select yes if all intersecting routes have characteristic**

Fulfilled?

1	Part of the road or highway system that serves as the principal roadway network for through traffic flow	Yes
2	Rural or suburban highway outside of, entering, or traversing a city	Yes
3	Appears as a major route on an official plan	Yes

## Warrant 9: Intersection Near a Grade Crossing

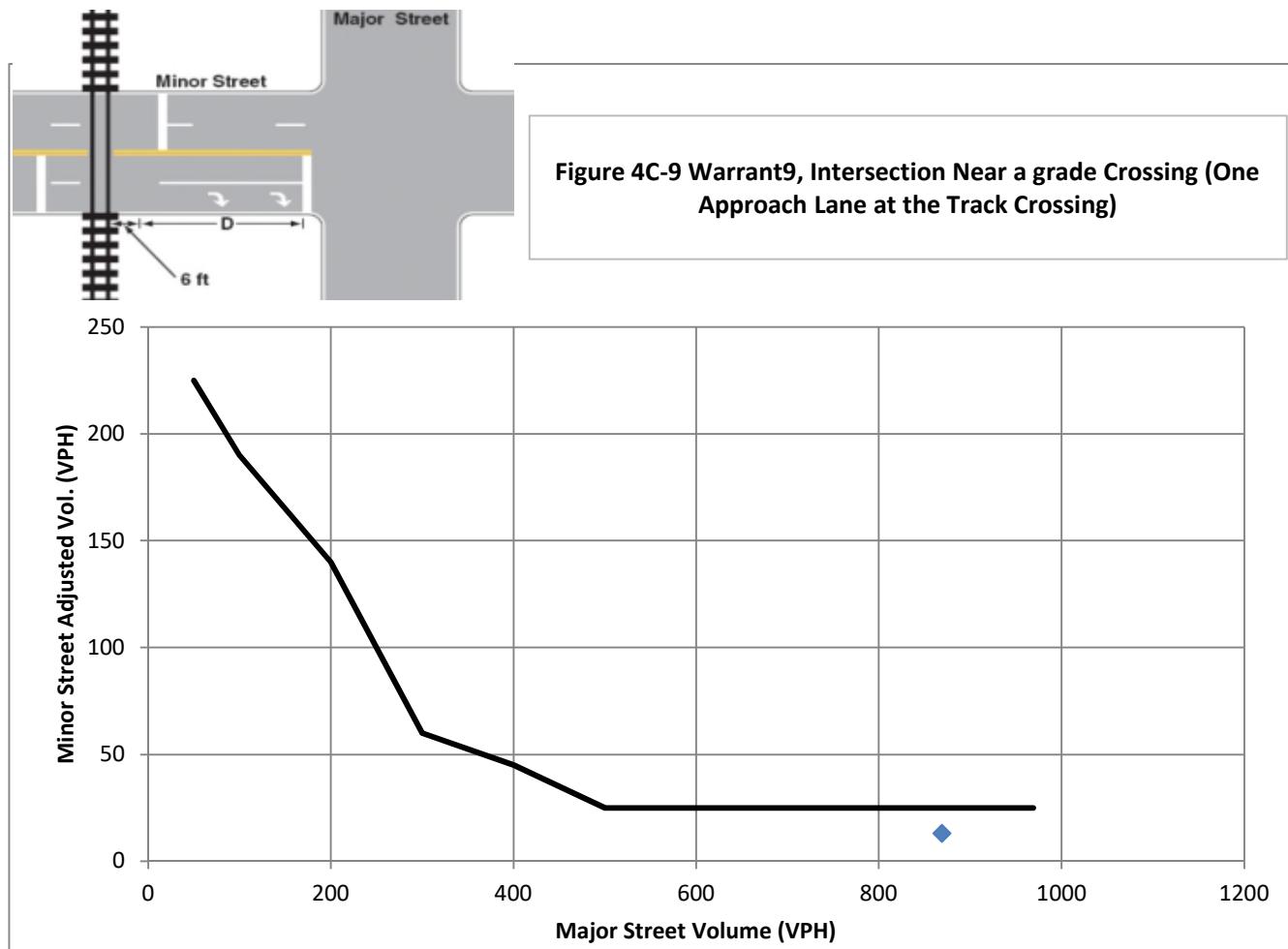
70%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Adjustment Factors			Manually Set Peak Hour?				
Rail Traffic per Day	% High Occupancy Buses on Minor Road	% Tractor-Trailer Trucks on Minor Road	D	Peak Hour	Major Road Vol.	Minor Road Vol.	Adjusted Minor Vol.
1	0	0% to 2.5%	660	17:00	869	39	13.065



Conclusions/Comments:

Hourly Volume Data																					
One Hour Time Period	↓ From North (SB)					← From East (WB)					↑ From South (NB)					→ From West (EB)					Total Vehicle Volume
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	6:00					314	6									13	113				446
	7:00					466	11									28	228				733
	8:00					311	12									29	222				574
	9:00					256	8									17	173				454
MD	10:00					208	6									12	171				397
	11:00					195	7									16	211				429
	12:00					203	6									112	220				541
	13:00					194	5									11	212				422
PM	14:00					205	6									13	259				483
	15:00					245	5									10	394				654
	16:00					345	7									14	445				811
	17:00					333	6									14	530				883
	18:00					267	7									16	414				704
	19:00					163	3									8	250				424
	20:00					110	3									8	183				304
	21:00					73	1									4	131				209
Totals	0	0	0	0	0	3888	99	0	3987	0	0	0	0	0	325	4156	0	0	4481	8468	

Note: Copy volume data and paste into cells using paste special -> values

Note: U-Turns are counted as Left Turns in the Volume Totals

Please Select the Major Road:

Major Road Left Turn as Minor Approach?

% Right Turns Included (Default 0%)

From North (SB)	0%
From East (WB)	0%
From South (NB)	100%
From West (EB)	0%

#### Major Road Volume Totals: East/West

Right	Thru	Left	T+LT	Total
0	427	6	433	433
0	694	11	705	705
0	533	12	545	545
0	429	8	437	437
0	379	6	385	385
0	406	7	413	413
0	423	6	429	429
0	406	5	411	411
0	464	6	470	470
0	639	5	644	644
0	790	7	797	797
0	863	6	869	869
0	681	7	688	688
0	413	3	416	416
0	293	3	296	296
0	204	1	205	205
0	8044	99	8143	8143

#### Minor Road Highest Volume: North/South

Right	Thru	Left	T+LT	Total
11	0	27	27	38
23	0	54	54	77
25	0	57	57	82
15	0	35	35	50
11	0	25	25	36
14	0	32	32	46
10	0	25	25	35
10	0	22	22	32
12	0	27	27	39
9	0	21	21	30
13	0	29	29	42
11	0	28	28	39
14	0	32	32	46
7	0	16	16	23
3	0	9	9	12
3	0	8	8	11
191	0	447	447	638

# Wisconsin Department of Transportation Traffic Signal Warrant Summary Worksheet

70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Plum Creek - West Entrance

County: Douglas

Town: Castle Rock

Major Street: Plum Creek

Minor Street: West Entrance

Critical Approach Speed: 50 mph

Critical Approach Speed: 30 mph

Lanes: 2 or more lanes

Lanes: 1 lane

% Right Turns Included

From North (SB) 0%

In built-up area of isolated community of < 10,000 population? No

From East (WB) 0%

Total number of approaches at intersection? 3

From South (NB) 100%

If it is a "T" intersection, inflate minor threshold to 150%? No

From West (EB) 0%

Manually set volume level? No

**Analysis based on PROJECTED volume data.**

Forecast Year	Within 5 Years of Construction?	Time (HH:MM)			
		From	AM / PM	To	AM / PM
2040	No	6	AM	10	PM

<b>Warrant Evaluation Summary</b>		<b>Warrant Met:</b>
<b>Warrant 1: Eight - Hour Vehicular Volume</b>		No
Condition A: Minimum Vehicular Volume		No
Condition B: Interruption of Continuous Traffic		No
Condition C: Combination: 80% of A and B		No
<b>Warrant 2: Four-Hour Volume</b>		No
<b>Warrant 3: Peak Hour Volume</b>		No
<b>Warrant 4: Pedestrian Volume</b>		N/A
Criterion A: Four-Hour		
Criterion B: Peak-Hour		
<b>Warrant 5: School Crossing</b>		N/A
<b>Warrant 6: Coordinated Signal System</b>		N/A
<b>Warrant 7: Crash Experience</b>		N/A
<b>Warrant 8: Roadway Network</b>		No
<b>Warrant 9: Intersection Near a Grade Crossing</b>		N/A

## Warrant Analysis Conducted By:

Name: John Aldridge

Agency: Aldridge Transportation Consultants

Date: 9/16/2018

## Warrant 1: Eight - Hour Vehicular Volume

70%

**Warrant Evaluated? Yes**

Condition A :		
Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	0

**Satisfied? No**

Condition B:		
Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	3	6

**Satisfied? No**

Condition C:		
Combination of A & B at 56%		
		<b>Satisfied? No</b>

**Warrant Satisfied? No**

**Manually Set To: No**

6:00 AM		Enter Start Time (Military Time) (HH:MM)		
Time Period	From	To	Major Road: Both App. (VPH)	Minor Road: High App. (VPH)
1	6:00	7:00	611	38
2	7:00	8:00	992	77
3	8:00	9:00	762	82
4	9:00	10:00	613	50
5	10:00	11:00	542	36
6	11:00	12:00	581	46
7	12:00	13:00	605	35
8	13:00	14:00	580	32
9	14:00	15:00	720	39
10	15:00	16:00	1056	40
11	16:00	17:00	1129	56
12	17:00	18:00	1234	39
13	18:00	19:00	974	46
14	19:00	20:00	591	23
15	20:00	21:00	419	12
16	21:00	22:00	291	11

Total  
649  
1069  
844  
663  
578  
627  
640  
612  
759  
1096  
1185  
1273  
1020  
614  
431  
302

## Warrant 2: Four-Hour Volume

70%

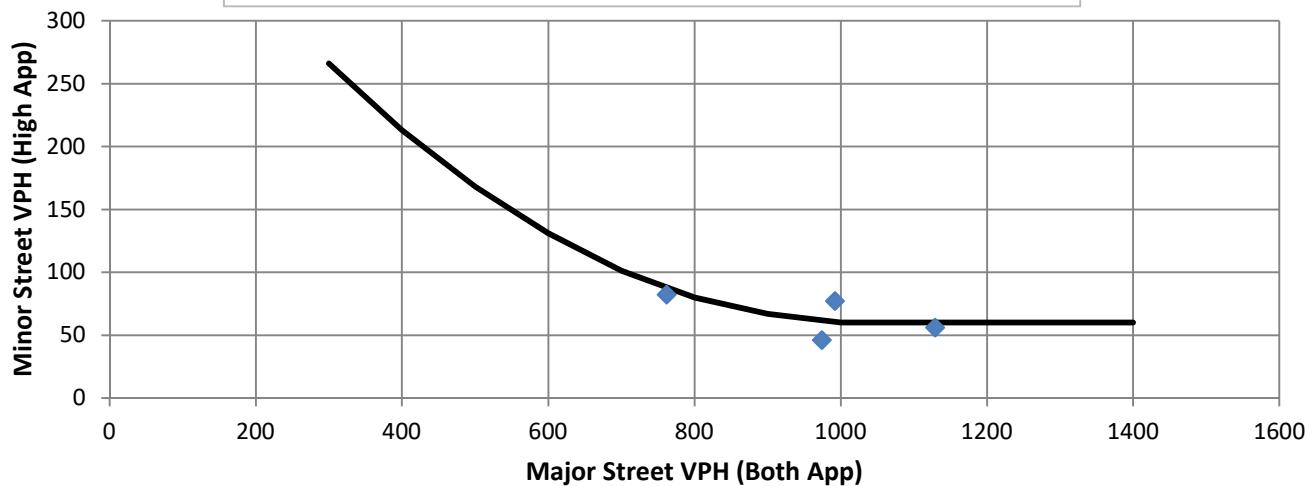
**Warrant Evaluated? Yes**

**Warrant Satisfied? No**

**Manually Set To: No**

Hour Start	7:00	16:00	8:00	18:00
Major Road Vol.	992	1129	762	974
Minor Road Vol.	77	56	82	46

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



## Warrant 3: Peak Hour Volume

70%

**Warrant Evaluated? Yes**

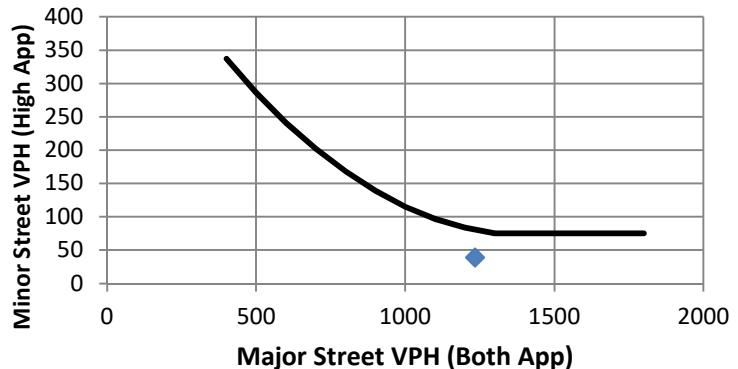
Condition justifying use of warrant:

Criteria	Met?
Delay on Minor Approach	4
Volume on Minor Approach	100
Total Entering Volume (veh/h)	650

**Warrant Satisfied? No**

**Manually Set To:**

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



**Manually Set Peak Hour? No**

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
17:00	1234	39

## Warrant 4: Pedestrian Volume

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

**Criterion A: Four Hour**

Hour (Start)	Pedestrian Volume	Major Road Vol.
0:00	0	#N/A

No

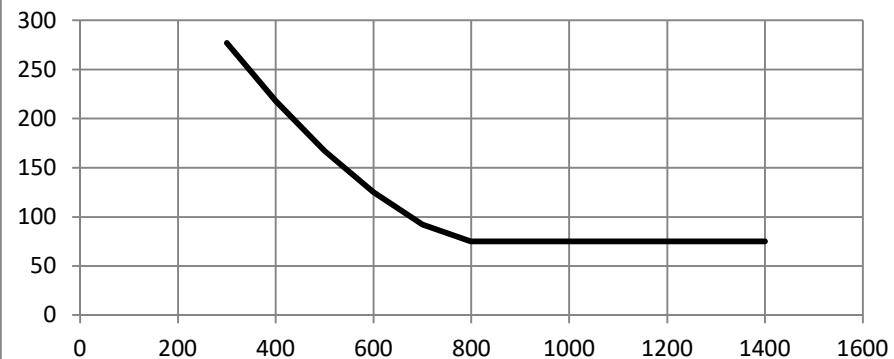
No

**Manually Set Major Rd Vol?**

Avg. walk speed less than 3.5 ft/s?

**Criterion A Satisfied?**

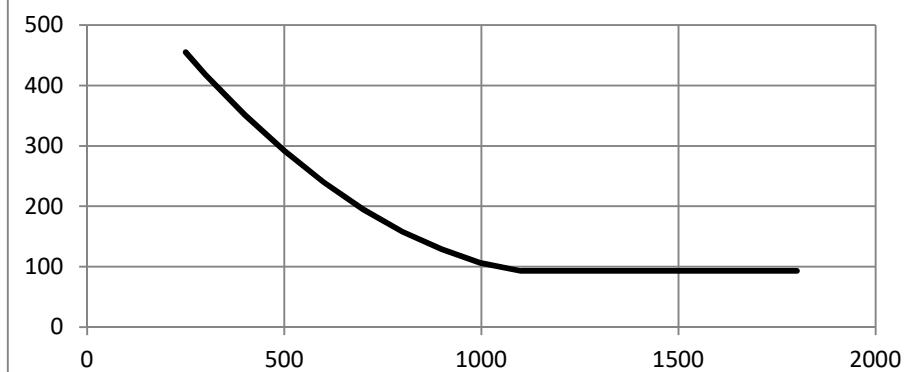
Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



**Criterion B: Peak Hour**

Peak Hour	Pedestrian Vol.	Major Road Vol.
#N/A	#N/A	#N/A

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



**Criterion B Satisfied?**

## Warrant 5: School Crossing

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	There are a MINIMUM of 20 school children during the highest crossing hour.	
2	There are fewer adequate gaps in the major road traffic stream during the period when the school children are using the crossing than the number of minutes in the same period.	
3	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 6: Coordinated Signal System

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	Signal spacing > 1000 ft	
2	On a one-way road or a road that has traffic predominantly in one direction, the adjacent signals are so far apart that they do not provide the necessary degree of vehicle platooning.	
3	On a two-way road, adjacent signals do not provide the necessary degree of platooning and the proposed and the adjacent signals will collectively provide a progressive operation.	

## Warrant 7: Crash Experience

70%

**Warrant Evaluated?**

**Warrant Satisfied? N/A**

**Manually Set To:**

Fulfilled?

**Criteria**

1	Adequate trial of other remedial measures has failed to reduce crash frequency.  Measures Tried:		Met?	Fulfilled?
2	Five or more reported crashes, of types susceptible to correction by signal, have occurred within a 12 month period.	# of crashes per 12 months		
3	Warrant 1, Condition A (80%)	No	#N/A	#N/A
	Warrant 1, Condition B (80%)	No		
	Warrant 4, Criterion A (80%)	#N/A		
	Warrant 4, Criterion B (80%)	#N/A		

## Warrant 8: Roadway Network

70%

**Warrant Evaluated? Yes**

**Warrant Satisfied? No**

**Manually Set To: No**

**Criteria**

1	Total entering volume of at least 1,000 veh/h during typical weekday peak hour		1273	Yes	No
	Five-year projected volumes that satisfy one or more of Warrants 1, 2, or 3.			No	
2	Total entering vol. of at least 1,000 veh/h for each of any 5 hrs of non-normal business day (Sat. or Sun.)	Hour			
		Volume			

**Characteristics of Major Routes - Select yes if all intersecting routes have characteristic**

Fulfilled?

1	Part of the road or highway system that serves as the principal roadway network for through traffic flow	Yes
2	Rural or suburban highway outside of, entering, or traversing a city	Yes
3	Appears as a major route on an official plan	Yes

## Warrant 9: Intersection Near a Grade Crossing

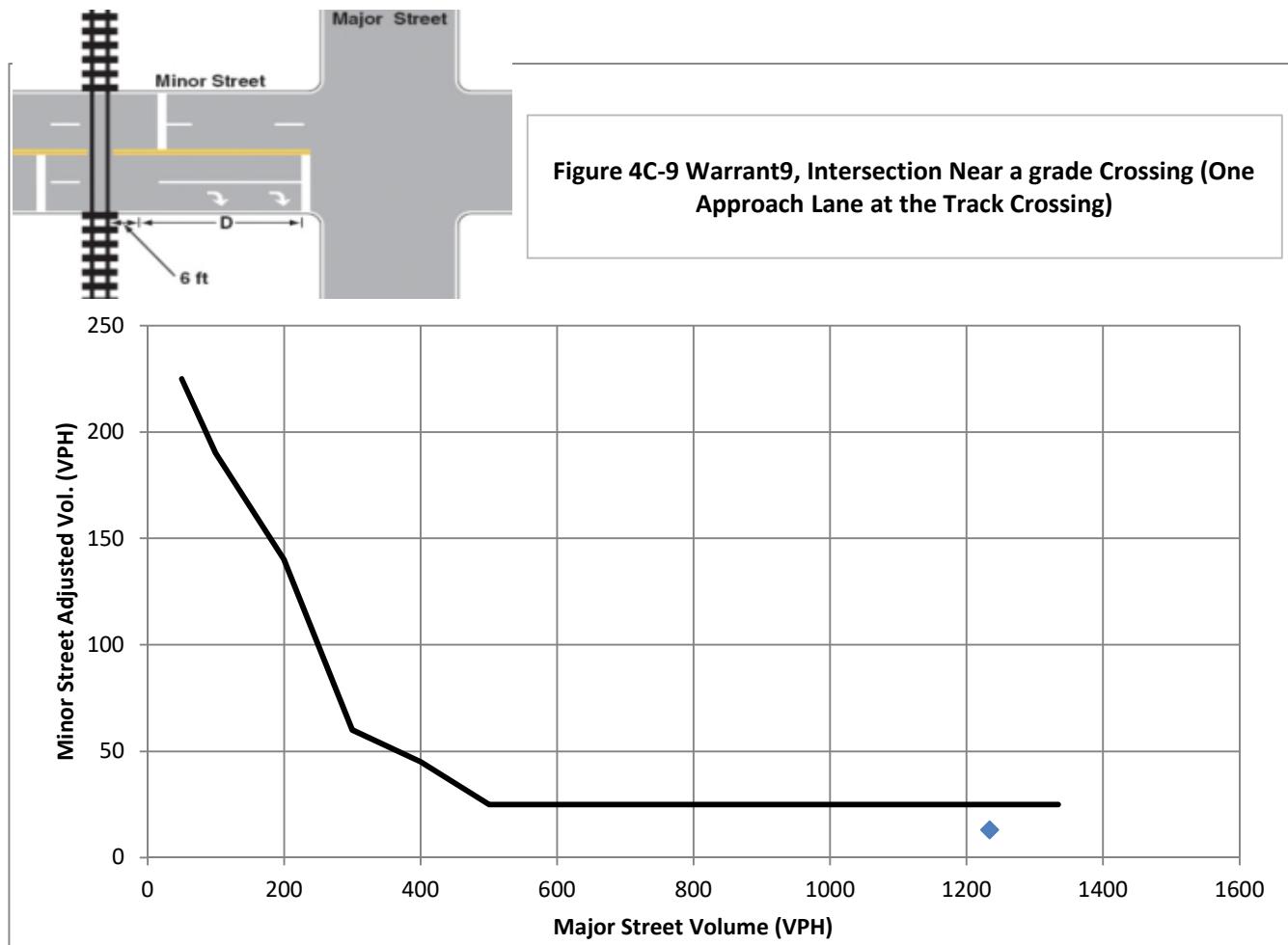
70%

Warrant Evaluated?

Warrant Satisfied? N/A

Manually Set To:

Adjustment Factors			Manually Set Peak Hour?				
Rail Traffic per Day	% High Occupancy Buses on Minor Road	% Tractor-Trailer Trucks on Minor Road	D	Peak Hour	Major Road Vol.	Minor Road Vol.	Adjusted Minor Vol.
1	0	0% to 2.5%	660	17:00	1234	39	13.065



Conclusions/Comments:

### Hourly Volume Data

One Hour Time Period	↓ From North (SB)					← From East (WB)					↑ From South (NB)					→ From West (EB)					Total Vehicle Volume	
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	6:00						449	6									13	162				630
	7:00						666	11									28	326				1031
	8:00						445	12									29	317				803
	9:00						366	8									17	247				638
MD	10:00						297	6									12	245				560
	11:00						279	7									16	302				604
	12:00						290	6									112	315				723
	13:00						277	5									11	303				596
PM	14:00						350	6									13	370				739
	15:00						493	5									10	563				1071
	16:00						493	7									14	636				1150
	17:00						476	6									14	758				1254
	18:00						382	7									16	592				997
	19:00						233	3									8	358				602
	20:00						157	3									8	262				430
	21:00						104	1									4	187				296
<b>Totals</b>		0	0	0	0	0	5757	99	0	5856	0	0	0	0	0	325	5943	0	0	6268	12124	

Note: Copy volume data and paste into cells using paste special -> values

Note: U-Turns are counted as Left Turns in the Volume Totals

Please Select the Major Road:

Major Road Left Turn as Minor Approach?

% Right Turns Included (Default 0%)

From North (SB)	<b>0%</b>
From East (WB)	<b>0%</b>
From South (NB)	<b>100%</b>
From West (EB)	<b>0%</b>

### Major Road Volume Totals: East/West

Right	Thru	Left	T+LT	Total
0	611	6	617	617
0	992	11	1003	1003
0	762	12	774	774
0	613	8	621	621
0	542	6	548	548
0	581	7	588	588
0	605	6	611	611
0	580	5	585	585
0	720	6	726	726
0	1056	5	1061	1061
0	1129	7	1136	1136
0	1234	6	1240	1240
0	974	7	981	981
0	591	3	594	594
0	419	3	422	422
0	291	1	292	292
0	11700	99	11799	11799

### Minor Road Highest Volume: North/South

Right	Thru	Left	T+LT	Total
11	0	27	27	38
23	0	54	54	77
25	0	57	57	82
15	0	35	35	50
11	0	25	25	36
14	0	32	32	46
10	0	25	25	35
10	0	22	22	32
12	0	27	27	39
9	0	21	21	30
13	0	29	29	42
11	0	28	28	39
14	0	32	32	46
7	0	16	16	23
3	0	9	9	12
3	0	8	8	11
191	0	447	447	638

## Vehicle Classification Report Summary

**Location:** PLUM CREEK PKWY E/O EATON ST

**Count Direction:** Eastbound / Westbound

**Date Range:** 8/28/2018 to 8/28/2018

**Site Code:** 01

	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
<b>Study Total</b>														
<b>Eastbound</b>	22	2,722	987	3	546	24	0	3	7	3	0	0	1	4,318
<b>Percent</b>	0.5%	63.0%	22.9%	0.1%	12.6%	0.6%	0.0%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	100%
<b>Westbound</b>	16	3,125	716	1	220	20	0	3	7	0	0	0	1	4,109
<b>Percent</b>	0.4%	76.1%	17.4%	0.0%	5.4%	0.5%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
<b>Total</b>	38	5,847	1,703	4	766	44	0	6	14	3	0	0	2	8,427
<b>Percent</b>	0.5%	69.4%	20.2%	0.0%	9.1%	0.5%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	100%

### FHWA Vehicle Classification

Class 1 - Motorcycles	Class 8 - Four or Fewer Axle Single-Trailer Trucks
Class 2 - Passenger Cars	Class 9 - Five-Axle Single-Trailer Trucks
Class 3 - Other Two-Axle, Four-Tire Single Unit Vehicles	Class 10 - Six or More Axle Single-Trailer Trucks
Class 4 - Buses	Class 11 - Five or fewer Axle Multi-Trailer Trucks
Class 5 - Two-Axle, Six-Tire, Single-Unit Trucks	Class 12 - Six-Axle Multi-Trailer Trucks
Class 6 - Three-Axle Single-Unit Trucks	Class 13 - Seven or More Axle Multi-Trailer Trucks
Class 7 - Four or More Axle Single-Unit Trucks	

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

Tuesday, August 28, 2018

Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	3	0	0	0	0	0	0	0	0	21
1:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	14
2:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
4:00 AM	0	11	3	0	0	0	0	0	0	0	0	0	0	14
5:00 AM	0	14	7	0	5	0	0	0	0	0	0	0	0	26
6:00 AM	0	72	24	0	16	0	0	0	0	1	0	0	0	113
7:00 AM	1	150	50	0	27	0	0	0	0	0	0	0	0	228
8:00 AM	1	127	61	0	29	1	0	1	0	1	0	0	1	222
9:00 AM	1	96	39	0	32	4	0	0	1	0	0	0	0	173
10:00 AM	0	99	41	0	29	2	0	0	0	0	0	0	0	171
11:00 AM	0	114	66	0	27	4	0	0	0	0	0	0	0	211
12:00 PM	0	125	57	1	31	1	0	2	3	0	0	0	0	220
1:00 PM	3	119	51	1	32	4	0	0	1	1	0	0	0	212
2:00 PM	1	160	62	0	33	3	0	0	0	0	0	0	0	259
3:00 PM	0	241	109	0	42	1	0	0	1	0	0	0	0	394
4:00 PM	2	301	99	0	43	0	0	0	0	0	0	0	0	445
5:00 PM	3	346	100	1	78	1	0	0	1	0	0	0	0	530
6:00 PM	5	286	85	0	36	2	0	0	0	0	0	0	0	414
7:00 PM	1	160	51	0	38	0	0	0	0	0	0	0	0	250
8:00 PM	4	123	36	0	20	0	0	0	0	0	0	0	0	183
9:00 PM	0	94	21	0	15	1	0	0	0	0	0	0	0	131
10:00 PM	0	32	15	0	7	0	0	0	0	0	0	0	0	54
11:00 PM	0	20	3	0	2	0	0	0	0	0	0	0	0	25
Total	22	2,722	987	3	546	24	0	3	7	3	0	0	1	4,318
Percent	0.5%	63.0%	22.9%	0.1%	12.6%	0.6%	0.0%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

Tuesday, August 28, 2018

Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
3:00 AM	0	14	1	0	0	0	0	0	0	0	0	0	0	15
4:00 AM	0	26	9	0	2	0	0	0	0	0	0	0	0	37
5:00 AM	0	81	21	0	10	0	0	0	0	0	0	0	0	112
6:00 AM	0	232	63	0	16	1	0	1	1	0	0	0	0	314
7:00 AM	1	367	74	0	23	1	0	0	0	0	0	0	0	466
8:00 AM	0	234	58	0	18	1	0	0	0	0	0	0	0	311
9:00 AM	1	198	42	0	10	2	0	0	3	0	0	0	0	256
10:00 AM	0	148	40	0	16	2	0	1	0	0	0	0	1	208
11:00 AM	1	142	40	0	8	3	0	0	1	0	0	0	0	195
12:00 PM	0	140	45	0	14	3	0	0	1	0	0	0	0	203
1:00 PM	1	135	41	1	14	2	0	0	0	0	0	0	0	194
2:00 PM	2	146	37	0	15	3	0	1	1	0	0	0	0	205
3:00 PM	1	174	54	0	14	2	0	0	0	0	0	0	0	245
4:00 PM	2	274	45	0	24	0	0	0	0	0	0	0	0	345
5:00 PM	1	254	60	0	18	0	0	0	0	0	0	0	0	333
6:00 PM	4	219	37	0	7	0	0	0	0	0	0	0	0	267
7:00 PM	0	134	22	0	7	0	0	0	0	0	0	0	0	163
8:00 PM	2	95	10	0	3	0	0	0	0	0	0	0	0	110
9:00 PM	0	63	10	0	0	0	0	0	0	0	0	0	0	73
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	31
11:00 PM	0	12	1	0	0	0	0	0	0	0	0	0	0	13
Total	16	3,125	716	1	220	20	0	3	7	0	0	0	1	4,109
Percent	0.4%	76.1%	17.4%	0.0%	5.4%	0.5%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

### Total Study Average

#### Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	3	0	0	0	0	0	0	0	0	21
1:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	14
2:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
4:00 AM	0	11	3	0	0	0	0	0	0	0	0	0	0	14
5:00 AM	0	14	7	0	5	0	0	0	0	0	0	0	0	26
6:00 AM	0	72	24	0	16	0	0	0	0	1	0	0	0	113
7:00 AM	1	150	50	0	27	0	0	0	0	0	0	0	0	228
8:00 AM	1	127	61	0	29	1	0	1	0	1	0	0	1	222
9:00 AM	1	96	39	0	32	4	0	0	1	0	0	0	0	173
10:00 AM	0	99	41	0	29	2	0	0	0	0	0	0	0	171
11:00 AM	0	114	66	0	27	4	0	0	0	0	0	0	0	211
12:00 PM	0	125	57	1	31	1	0	2	3	0	0	0	0	220
1:00 PM	3	119	51	1	32	4	0	0	1	1	0	0	0	212
2:00 PM	1	160	62	0	33	3	0	0	0	0	0	0	0	259
3:00 PM	0	241	109	0	42	1	0	0	1	0	0	0	0	394
4:00 PM	2	301	99	0	43	0	0	0	0	0	0	0	0	445
5:00 PM	3	346	100	1	78	1	0	0	1	0	0	0	0	530
6:00 PM	5	286	85	0	36	2	0	0	0	0	0	0	0	414
7:00 PM	1	160	51	0	38	0	0	0	0	0	0	0	0	250
8:00 PM	4	123	36	0	20	0	0	0	0	0	0	0	0	183
9:00 PM	0	94	21	0	15	1	0	0	0	0	0	0	0	131
10:00 PM	0	32	15	0	7	0	0	0	0	0	0	0	0	54
11:00 PM	0	20	3	0	2	0	0	0	0	0	0	0	0	25
<b>Total</b>	<b>22</b>	<b>2,722</b>	<b>987</b>	<b>3</b>	<b>546</b>	<b>24</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4,318</b>
<b>Percent</b>	<b>0.5%</b>	<b>63.0%</b>	<b>22.9%</b>	<b>0.1%</b>	<b>12.6%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	

Note: Average only considered on days with 24-hours of data.

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

### Total Study Average

#### Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
3:00 AM	0	14	1	0	0	0	0	0	0	0	0	0	0	15
4:00 AM	0	26	9	0	2	0	0	0	0	0	0	0	0	37
5:00 AM	0	81	21	0	10	0	0	0	0	0	0	0	0	112
6:00 AM	0	232	63	0	16	1	0	1	1	0	0	0	0	314
7:00 AM	1	367	74	0	23	1	0	0	0	0	0	0	0	466
8:00 AM	0	234	58	0	18	1	0	0	0	0	0	0	0	311
9:00 AM	1	198	42	0	10	2	0	0	3	0	0	0	0	256
10:00 AM	0	148	40	0	16	2	0	1	0	0	0	0	1	208
11:00 AM	1	142	40	0	8	3	0	0	1	0	0	0	0	195
12:00 PM	0	140	45	0	14	3	0	0	1	0	0	0	0	203
1:00 PM	1	135	41	1	14	2	0	0	0	0	0	0	0	194
2:00 PM	2	146	37	0	15	3	0	1	1	0	0	0	0	205
3:00 PM	1	174	54	0	14	2	0	0	0	0	0	0	0	245
4:00 PM	2	274	45	0	24	0	0	0	0	0	0	0	0	345
5:00 PM	1	254	60	0	18	0	0	0	0	0	0	0	0	333
6:00 PM	4	219	37	0	7	0	0	0	0	0	0	0	0	267
7:00 PM	0	134	22	0	7	0	0	0	0	0	0	0	0	163
8:00 PM	2	95	10	0	3	0	0	0	0	0	0	0	0	110
9:00 PM	0	63	10	0	0	0	0	0	0	0	0	0	0	73
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	31
11:00 PM	0	12	1	0	0	0	0	0	0	0	0	0	0	13
<b>Total</b>	<b>16</b>	<b>3,125</b>	<b>716</b>	<b>1</b>	<b>220</b>	<b>20</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4,109</b>
<b>Percent</b>	<b>0.4%</b>	<b>76.1%</b>	<b>17.4%</b>	<b>0.0%</b>	<b>5.4%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>

Note: Average only considered on days with 24-hours of data.

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

### 3-Day (Tuesday - Thursday) Average

#### Eastbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	15	3	0	3	0	0	0	0	0	0	0	0	21
1:00 AM	0	13	0	0	1	0	0	0	0	0	0	0	0	14
2:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
3:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
4:00 AM	0	11	3	0	0	0	0	0	0	0	0	0	0	14
5:00 AM	0	14	7	0	5	0	0	0	0	0	0	0	0	26
6:00 AM	0	72	24	0	16	0	0	0	0	1	0	0	0	113
7:00 AM	1	150	50	0	27	0	0	0	0	0	0	0	0	228
8:00 AM	1	127	61	0	29	1	0	1	0	1	0	0	1	222
9:00 AM	1	96	39	0	32	4	0	0	1	0	0	0	0	173
10:00 AM	0	99	41	0	29	2	0	0	0	0	0	0	0	171
11:00 AM	0	114	66	0	27	4	0	0	0	0	0	0	0	211
12:00 PM	0	125	57	1	31	1	0	2	3	0	0	0	0	220
1:00 PM	3	119	51	1	32	4	0	0	1	1	0	0	0	212
2:00 PM	1	160	62	0	33	3	0	0	0	0	0	0	0	259
3:00 PM	0	241	109	0	42	1	0	0	1	0	0	0	0	394
4:00 PM	2	301	99	0	43	0	0	0	0	0	0	0	0	445
5:00 PM	3	346	100	1	78	1	0	0	1	0	0	0	0	530
6:00 PM	5	286	85	0	36	2	0	0	0	0	0	0	0	414
7:00 PM	1	160	51	0	38	0	0	0	0	0	0	0	0	250
8:00 PM	4	123	36	0	20	0	0	0	0	0	0	0	0	183
9:00 PM	0	94	21	0	15	1	0	0	0	0	0	0	0	131
10:00 PM	0	32	15	0	7	0	0	0	0	0	0	0	0	54
11:00 PM	0	20	3	0	2	0	0	0	0	0	0	0	0	25
Total	22	2,722	987	3	546	24	0	3	7	3	0	0	1	4,318
Percent	0.5%	63.0%	22.9%	0.1%	12.6%	0.6%	0.0%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

### 3-Day (Tuesday - Thursday) Average

Westbound

Time	FHWA Vehicle Classification													Total Volume
	1	2	3	4	5	6	7	8	9	10	11	12	13	
12:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
1:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
2:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
3:00 AM	0	14	1	0	0	0	0	0	0	0	0	0	0	15
4:00 AM	0	26	9	0	2	0	0	0	0	0	0	0	0	37
5:00 AM	0	81	21	0	10	0	0	0	0	0	0	0	0	112
6:00 AM	0	232	63	0	16	1	0	1	1	0	0	0	0	314
7:00 AM	1	367	74	0	23	1	0	0	0	0	0	0	0	466
8:00 AM	0	234	58	0	18	1	0	0	0	0	0	0	0	311
9:00 AM	1	198	42	0	10	2	0	0	3	0	0	0	0	256
10:00 AM	0	148	40	0	16	2	0	1	0	0	0	0	1	208
11:00 AM	1	142	40	0	8	3	0	0	1	0	0	0	0	195
12:00 PM	0	140	45	0	14	3	0	0	1	0	0	0	0	203
1:00 PM	1	135	41	1	14	2	0	0	0	0	0	0	0	194
2:00 PM	2	146	37	0	15	3	0	1	1	0	0	0	0	205
3:00 PM	1	174	54	0	14	2	0	0	0	0	0	0	0	245
4:00 PM	2	274	45	0	24	0	0	0	0	0	0	0	0	345
5:00 PM	1	254	60	0	18	0	0	0	0	0	0	0	0	333
6:00 PM	4	219	37	0	7	0	0	0	0	0	0	0	0	267
7:00 PM	0	134	22	0	7	0	0	0	0	0	0	0	0	163
8:00 PM	2	95	10	0	3	0	0	0	0	0	0	0	0	110
9:00 PM	0	63	10	0	0	0	0	0	0	0	0	0	0	73
10:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	31
11:00 PM	0	12	1	0	0	0	0	0	0	0	0	0	0	13
Total	16	3,125	716	1	220	20	0	3	7	0	0	0	1	4,109
Percent	0.4%	76.1%	17.4%	0.0%	5.4%	0.5%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%

## Vehicle Speed Report Summary

**Location:** PLUM CREEK PKWY E/O EATON ST

**Count Direction:** Eastbound / Westbound

**Date Range:** 8/28/2018 to 8/28/2018

**Site Code:** 01

	Speed Range (mph)																Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +
<b>Study Total</b>																	
<b>Eastbound</b>	0	0	0	7	21	53	308	1,364	1,895	579	81	8	1	1	0	0	0
<b>Percent</b>	0.0%	0.0%	0.0%	0.2%	0.5%	1.2%	7.1%	31.6%	43.9%	13.4%	1.9%	0.2%	0.0%	0.0%	0.0%	0.0%	100%
<b>Westbound</b>	0	0	3	7	27	194	1,270	2,059	497	48	3	0	0	1	0	0	0
<b>Percent</b>	0.0%	0.0%	0.1%	0.2%	0.7%	4.7%	30.9%	50.1%	12.1%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
<b>Total</b>	0	0	3	14	48	247	1,578	3,423	2,392	627	84	8	1	2	0	0	0
<b>Percent</b>	0.0%	0.0%	0.0%	0.2%	0.6%	2.9%	18.7%	40.6%	28.4%	7.4%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary		Total Study Speed Statistics	
<b>Eastbound</b>		<b>Eastbound</b>	
50th Percentile (Median)	45.8 mph	Mean (Average) Speed	45.8 mph
85th Percentile	49.9 mph	10 mph Pace	40.7 - 50.7 mph
95th Percentile	52.8 mph	Percent in Pace	76.4 %
<b>Westbound</b>		<b>Westbound</b>	
50th Percentile (Median)	40.9 mph	Mean (Average) Speed	41.1 mph
85th Percentile	44.6 mph	10 mph Pace	36.4 - 46.4 mph
95th Percentile	46.8 mph	Percent in Pace	83.6 %

Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 to 8/28/2018  
 Site Code: 01

Tuesday, August 28, 2018

Eastbound

Time	Speed Range (mph)															Total Volume	
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	
12:00 AM	0	0	0	0	0	0	1	8	11	1	0	0	0	0	0	0	21
1:00 AM	0	0	0	0	0	0	1	8	4	1	0	0	0	0	0	0	14
2:00 AM	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	4
3:00 AM	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	4
4:00 AM	0	0	0	0	0	3	2	4	3	1	1	0	0	0	0	0	14
5:00 AM	0	0	0	0	0	0	3	11	10	2	0	0	0	0	0	0	26
6:00 AM	0	0	0	0	0	0	11	44	34	19	5	0	0	0	0	0	113
7:00 AM	0	0	0	0	1	2	30	80	85	25	4	0	1	0	0	0	228
8:00 AM	0	0	0	0	4	0	23	82	89	20	3	1	0	0	0	0	222
9:00 AM	0	0	0	0	0	11	17	51	72	17	5	0	0	0	0	0	173
10:00 AM	0	0	0	0	4	9	18	44	72	22	2	0	0	0	0	0	171
11:00 AM	0	0	0	1	5	5	30	76	78	11	3	2	0	0	0	0	211
12:00 PM	0	0	0	4	1	2	20	75	87	28	3	0	0	0	0	0	220
1:00 PM	0	0	0	0	2	7	13	65	87	35	3	0	0	0	0	0	212
2:00 PM	0	0	0	2	4	1	21	69	120	35	7	0	0	0	0	0	259
3:00 PM	0	0	0	0	0	4	9	137	187	50	5	1	0	1	0	0	394
4:00 PM	0	0	0	0	0	2	37	121	216	62	6	1	0	0	0	0	445
5:00 PM	0	0	0	0	0	1	14	146	263	98	8	0	0	0	0	0	530
6:00 PM	0	0	0	0	0	1	13	98	215	79	7	1	0	0	0	0	414
7:00 PM	0	0	0	0	0	2	21	71	109	38	8	1	0	0	0	0	250
8:00 PM	0	0	0	0	0	1	13	74	75	17	3	0	0	0	0	0	183
9:00 PM	0	0	0	0	0	1	6	65	45	10	4	0	0	0	0	0	131
10:00 PM	0	0	0	0	0	0	4	19	25	4	1	1	0	0	0	0	54
11:00 PM	0	0	0	0	0	0	1	12	6	4	2	0	0	0	0	0	25
Total	0	0	0	7	21	53	308	1,364	1,895	579	81	8	1	1	0	0	4,318
Percent	0.0%	0.0%	0.0%	0.2%	0.5%	1.2%	7.1%	31.6%	43.9%	13.4%	1.9%	0.2%	0.0%	0.0%	0.0%	0.0%	

Daily Percentile Speed Summary	Speed Statistics
50th Percentile (Median)	45.8 mph
85th Percentile	49.9 mph
95th Percentile	52.8 mph
Mean (Average) Speed	45.8 mph
10 mph Pace	40.7 - 50.7 mph
Percent in Pace	76.4 %

**Location:** PLUM CREEK PKWY E/O EATON ST  
**Date Range:** 8/28/2018 to 8/28/2018  
**Site Code:** 01



**Tuesday, August 28, 2018**

**Westbound**

Time	Speed Range (mph)																Total Volume	
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	4
1:00 AM	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0	0	6
2:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
3:00 AM	0	0	0	0	0	1	4	8	2	0	0	0	0	0	0	0	0	15
4:00 AM	0	0	0	0	0	2	18	13	2	2	0	0	0	0	0	0	0	37
5:00 AM	0	0	0	0	0	1	26	70	12	3	0	0	0	0	0	0	0	112
6:00 AM	0	0	0	0	1	20	89	163	40	1	0	0	0	0	0	0	0	314
7:00 AM	0	0	3	7	12	20	130	238	53	3	0	0	0	0	0	0	0	466
8:00 AM	0	0	0	0	0	9	98	155	45	4	0	0	0	0	0	0	0	311
9:00 AM	0	0	0	0	3	8	85	132	26	2	0	0	0	0	0	0	0	256
10:00 AM	0	0	0	0	0	12	71	92	30	3	0	0	0	0	0	0	0	208
11:00 AM	0	0	0	0	0	10	72	88	23	2	0	0	0	0	0	0	0	195
12:00 PM	0	0	0	0	2	14	73	79	31	2	2	0	0	0	0	0	0	203
1:00 PM	0	0	0	0	0	7	54	98	32	3	0	0	0	0	0	0	0	194
2:00 PM	0	0	0	0	0	6	76	94	25	4	0	0	0	0	0	0	0	205
3:00 PM	0	0	0	0	3	15	66	129	29	3	0	0	0	0	0	0	0	245
4:00 PM	0	0	0	0	2	19	110	180	28	6	0	0	0	0	0	0	0	345
5:00 PM	0	0	0	0	2	28	102	163	38	0	0	0	0	0	0	0	0	333
6:00 PM	0	0	0	0	0	3	68	156	37	2	1	0	0	0	0	0	0	267
7:00 PM	0	0	0	0	2	9	53	81	17	1	0	0	0	0	0	0	0	163
8:00 PM	0	0	0	0	0	8	38	55	7	2	0	0	0	0	0	0	0	110
9:00 PM	0	0	0	0	0	1	23	38	9	2	0	0	0	0	0	0	0	73
10:00 PM	0	0	0	0	0	0	10	13	7	1	0	0	0	0	0	0	0	31
11:00 PM	0	0	0	0	0	1	3	4	2	2	0	0	0	1	0	0	0	13
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>27</b>	<b>194</b>	<b>1,270</b>	<b>2,059</b>	<b>497</b>	<b>48</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,109</b>
<b>Percent</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.7%</b>	<b>4.7%</b>	<b>30.9%</b>	<b>50.1%</b>	<b>12.1%</b>	<b>1.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	

Daily Percentile Speed Summary	Speed Statistics
50th Percentile (Median) 40.9 mph	Mean (Average) Speed 41.1 mph
85th Percentile 44.6 mph	10 mph Pace 36.4 - 46.4 mph
95th Percentile 46.8 mph	Percent in Pace 83.6 %

**Location:** PLUM CREEK PKWY E/O EATON ST  
**Date Range:** 8/28/2018 to 8/28/2018  
**Site Code:** 01



### Total Study Average

**Eastbound**

Time	Speed Range (mph)															Total Volume	
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	
12:00 AM	0	0	0	0	0	0	1	8	11	1	0	0	0	0	0	0	21
1:00 AM	0	0	0	0	0	0	1	8	4	1	0	0	0	0	0	0	14
2:00 AM	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	4
3:00 AM	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	4
4:00 AM	0	0	0	0	0	3	2	4	3	1	1	0	0	0	0	0	14
5:00 AM	0	0	0	0	0	0	3	11	10	2	0	0	0	0	0	0	26
6:00 AM	0	0	0	0	0	0	11	44	34	19	5	0	0	0	0	0	113
7:00 AM	0	0	0	0	1	2	30	80	85	25	4	0	1	0	0	0	228
8:00 AM	0	0	0	0	4	0	23	82	89	20	3	1	0	0	0	0	222
9:00 AM	0	0	0	0	0	11	17	51	72	17	5	0	0	0	0	0	173
10:00 AM	0	0	0	0	4	9	18	44	72	22	2	0	0	0	0	0	171
11:00 AM	0	0	0	1	5	5	30	76	78	11	3	2	0	0	0	0	211
12:00 PM	0	0	0	4	1	2	20	75	87	28	3	0	0	0	0	0	220
1:00 PM	0	0	0	0	2	7	13	65	87	35	3	0	0	0	0	0	212
2:00 PM	0	0	0	2	4	1	21	69	120	35	7	0	0	0	0	0	259
3:00 PM	0	0	0	0	0	4	9	137	187	50	5	1	0	1	0	0	394
4:00 PM	0	0	0	0	0	2	37	121	216	62	6	1	0	0	0	0	445
5:00 PM	0	0	0	0	0	1	14	146	263	98	8	0	0	0	0	0	530
6:00 PM	0	0	0	0	0	1	13	98	215	79	7	1	0	0	0	0	414
7:00 PM	0	0	0	0	0	2	21	71	109	38	8	1	0	0	0	0	250
8:00 PM	0	0	0	0	0	1	13	74	75	17	3	0	0	0	0	0	183
9:00 PM	0	0	0	0	0	1	6	65	45	10	4	0	0	0	0	0	131
10:00 PM	0	0	0	0	0	0	4	19	25	4	1	1	0	0	0	0	54
11:00 PM	0	0	0	0	0	0	1	12	6	4	2	0	0	0	0	0	25
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>21</b>	<b>53</b>	<b>308</b>	<b>1,364</b>	<b>1,895</b>	<b>579</b>	<b>81</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4,318</b>
<b>Percent</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.2%</b>	<b>0.5%</b>	<b>1.2%</b>	<b>7.1%</b>	<b>31.6%</b>	<b>43.9%</b>	<b>13.4%</b>	<b>1.9%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	

Note: Average only considered on days with 24-hours of data.

Total Study Percentile Speed Summary		Total Study Speed Statistics					
50th Percentile (Median)	45.8 mph	Mean (Average) Speed			45.8 mph		
85th Percentile	49.9 mph	10 mph Pace			40.7 - 50.7 mph		
95th Percentile	52.8 mph	Percent in Pace			76.4 %		

**Location:** PLUM CREEK PKWY E/O EATON ST  
**Date Range:** 8/28/2018 to 8/28/2018  
**Site Code:** 01



### Total Study Average

#### Westbound

Time	Speed Range (mph)															Total Volume	
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	
12:00 AM	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	4
1:00 AM	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0	6
2:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
3:00 AM	0	0	0	0	0	1	4	8	2	0	0	0	0	0	0	0	15
4:00 AM	0	0	0	0	0	2	18	13	2	2	0	0	0	0	0	0	37
5:00 AM	0	0	0	0	0	1	26	70	12	3	0	0	0	0	0	0	112
6:00 AM	0	0	0	0	1	20	89	163	40	1	0	0	0	0	0	0	314
7:00 AM	0	0	3	7	12	20	130	238	53	3	0	0	0	0	0	0	466
8:00 AM	0	0	0	0	0	9	98	155	45	4	0	0	0	0	0	0	311
9:00 AM	0	0	0	0	3	8	85	132	26	2	0	0	0	0	0	0	256
10:00 AM	0	0	0	0	0	12	71	92	30	3	0	0	0	0	0	0	208
11:00 AM	0	0	0	0	0	10	72	88	23	2	0	0	0	0	0	0	195
12:00 PM	0	0	0	0	2	14	73	79	31	2	2	0	0	0	0	0	203
1:00 PM	0	0	0	0	0	7	54	98	32	3	0	0	0	0	0	0	194
2:00 PM	0	0	0	0	0	6	76	94	25	4	0	0	0	0	0	0	205
3:00 PM	0	0	0	0	3	15	66	129	29	3	0	0	0	0	0	0	245
4:00 PM	0	0	0	0	2	19	110	180	28	6	0	0	0	0	0	0	345
5:00 PM	0	0	0	0	2	28	102	163	38	0	0	0	0	0	0	0	333
6:00 PM	0	0	0	0	0	3	68	156	37	2	1	0	0	0	0	0	267
7:00 PM	0	0	0	0	2	9	53	81	17	1	0	0	0	0	0	0	163
8:00 PM	0	0	0	0	0	8	38	55	7	2	0	0	0	0	0	0	110
9:00 PM	0	0	0	0	0	1	23	38	9	2	0	0	0	0	0	0	73
10:00 PM	0	0	0	0	0	0	10	13	7	1	0	0	0	0	0	0	31
11:00 PM	0	0	0	0	0	1	3	4	2	2	0	0	0	1	0	0	13
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>27</b>	<b>194</b>	<b>1,270</b>	<b>2,059</b>	<b>497</b>	<b>48</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4,109</b>
<b>Percent</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.7%</b>	<b>4.7%</b>	<b>30.9%</b>	<b>50.1%</b>	<b>12.1%</b>	<b>1.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	

Note: Average only considered on days with 24-hours of data.

Total Study Percentile Speed Summary		Total Study Speed Statistics					
50th Percentile (Median)	40.9 mph	Mean (Average) Speed			41.1 mph		
85th Percentile	44.6 mph	10 mph Pace			36.4 - 46.4 mph		
95th Percentile	46.8 mph	Percent in Pace			83.6 %		

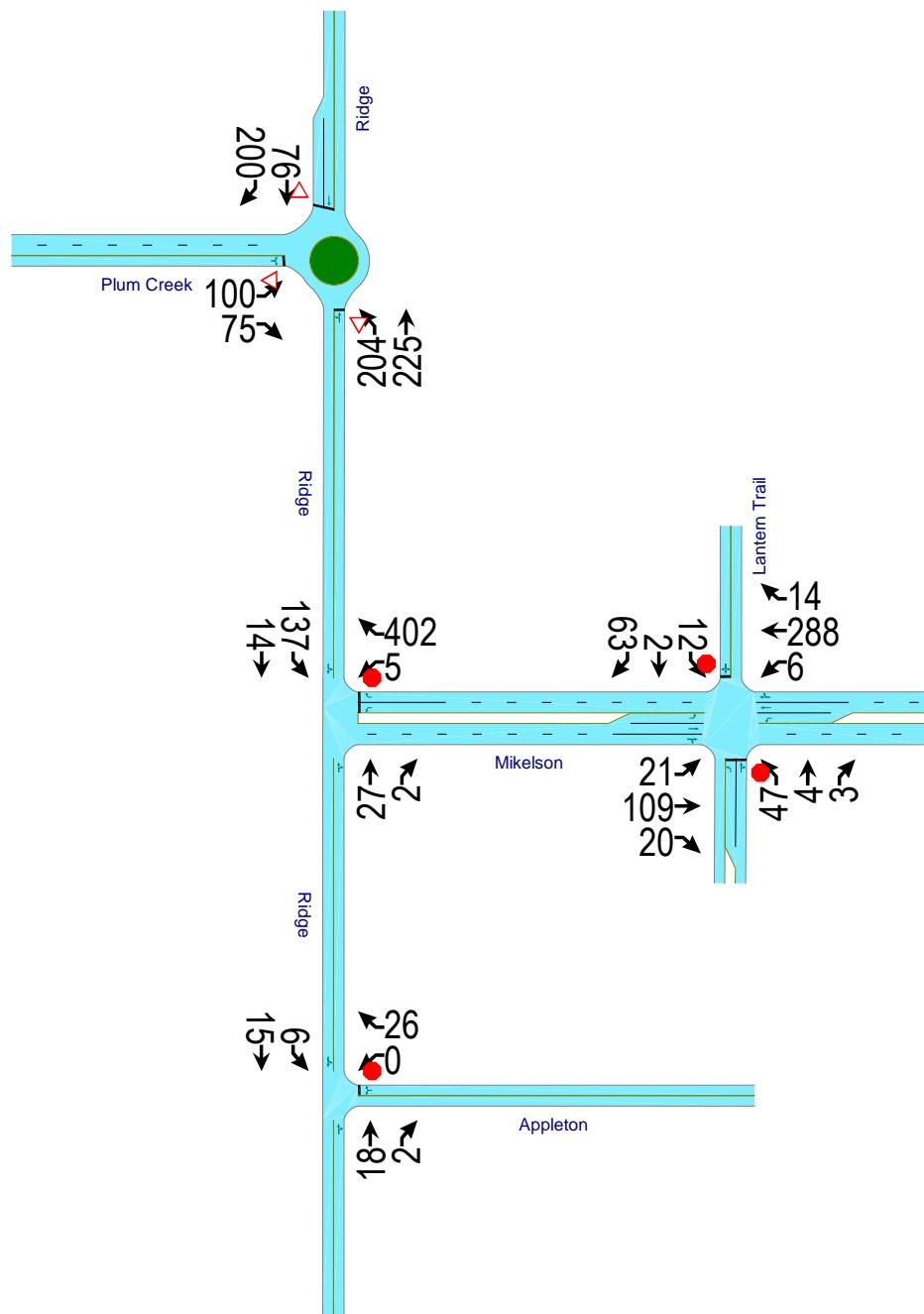
Location: PLUM CREEK PKWY E/O EATON ST  
 Date Range: 8/28/2018 - 9/3/2018  
 Site Code: 01

Time	Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			Monday					
	8/28/2018			8/29/2018			8/30/2018			8/31/2018			9/1/2018			9/2/2018			9/3/2018			Mid-Week Average		
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	21	4	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	4	25	
1:00 AM	14	6	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	6	20	
2:00 AM	4	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	7	
3:00 AM	4	15	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	15	19	
4:00 AM	14	37	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	37	51	
5:00 AM	26	112	138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	112	138	
6:00 AM	113	314	427	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	113	314	427	
7:00 AM	228	466	694	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	228	466	694	
8:00 AM	222	311	533	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	222	311	533	
9:00 AM	173	256	429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	173	256	429	
10:00 AM	171	208	379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171	208	379	
11:00 AM	211	195	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	211	195	406	
12:00 PM	220	203	423	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	220	203	423	
1:00 PM	212	194	406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	212	194	406	
2:00 PM	259	205	464	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	259	205	464	
3:00 PM	394	245	639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	394	245	639	
4:00 PM	445	345	790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	445	345	790	
5:00 PM	530	333	863	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	530	333	863	
6:00 PM	414	267	681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414	267	681	
7:00 PM	250	163	413	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	163	413	
8:00 PM	183	110	293	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	183	110	293	
9:00 PM	131	73	204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	131	73	204	
10:00 PM	54	31	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	31	85	
11:00 PM	25	13	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	13	38	
<b>Total</b>	<b>4,318</b>	<b>4,109</b>	<b>8,427</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>4,318</b>	<b>4,109</b>	<b>8,427</b>	
<b>Percent</b>	<b>51%</b>	<b>49%</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>51%</b>	<b>49%</b>	-	

1. Mid-week average includes data between Tuesday and Thursday.

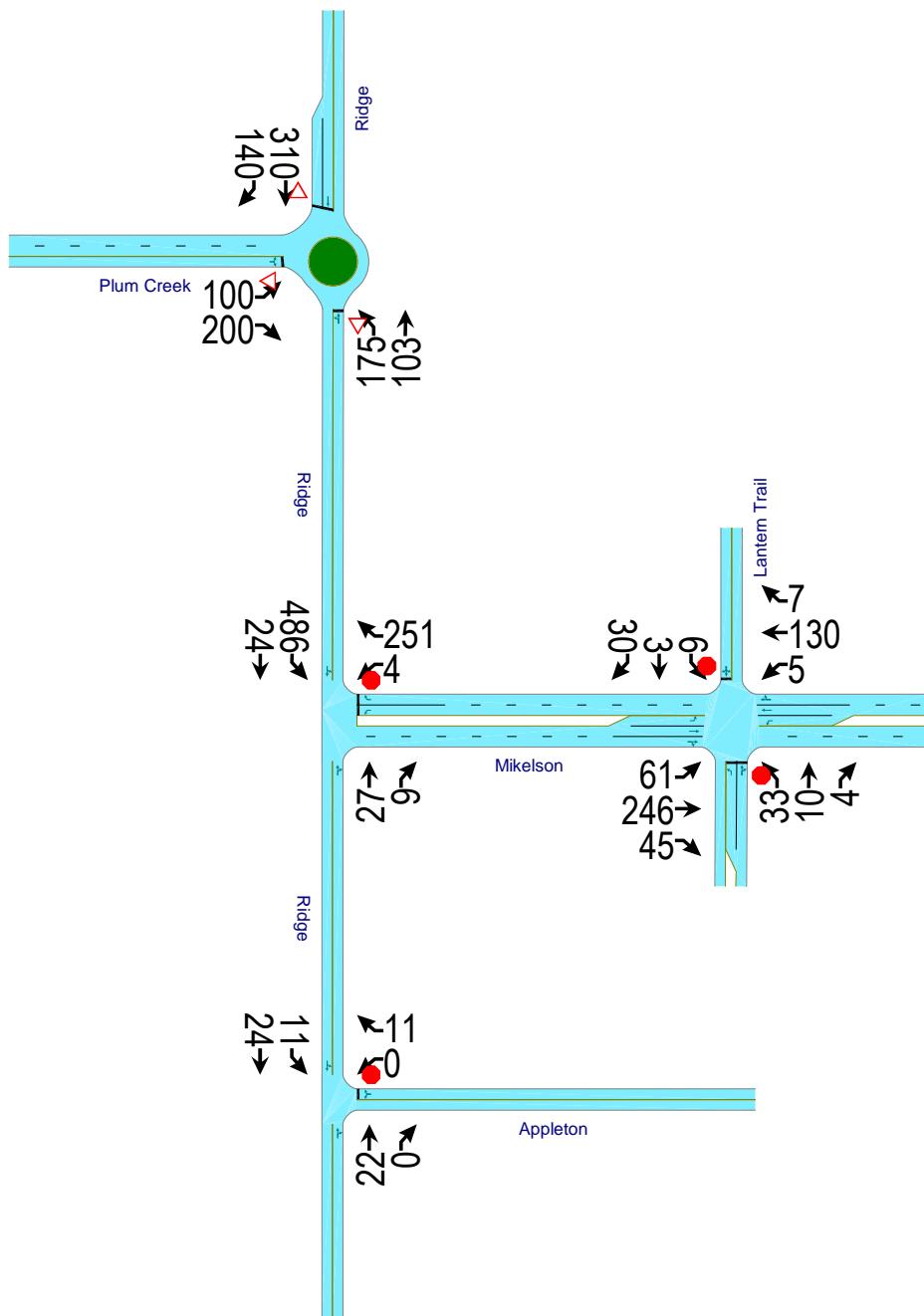
Oaks at Castle Rock

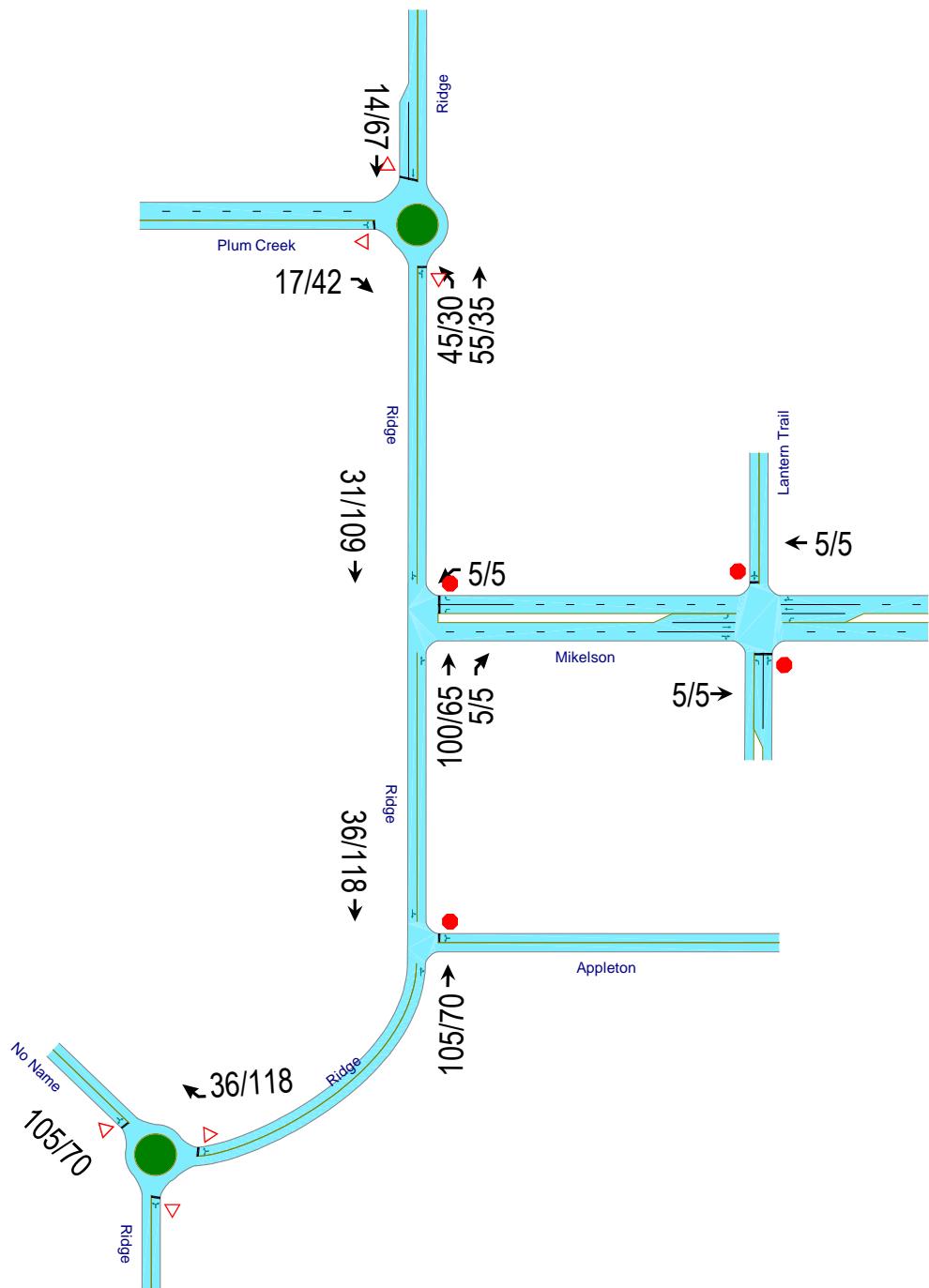
Figure 2  
Existing AM

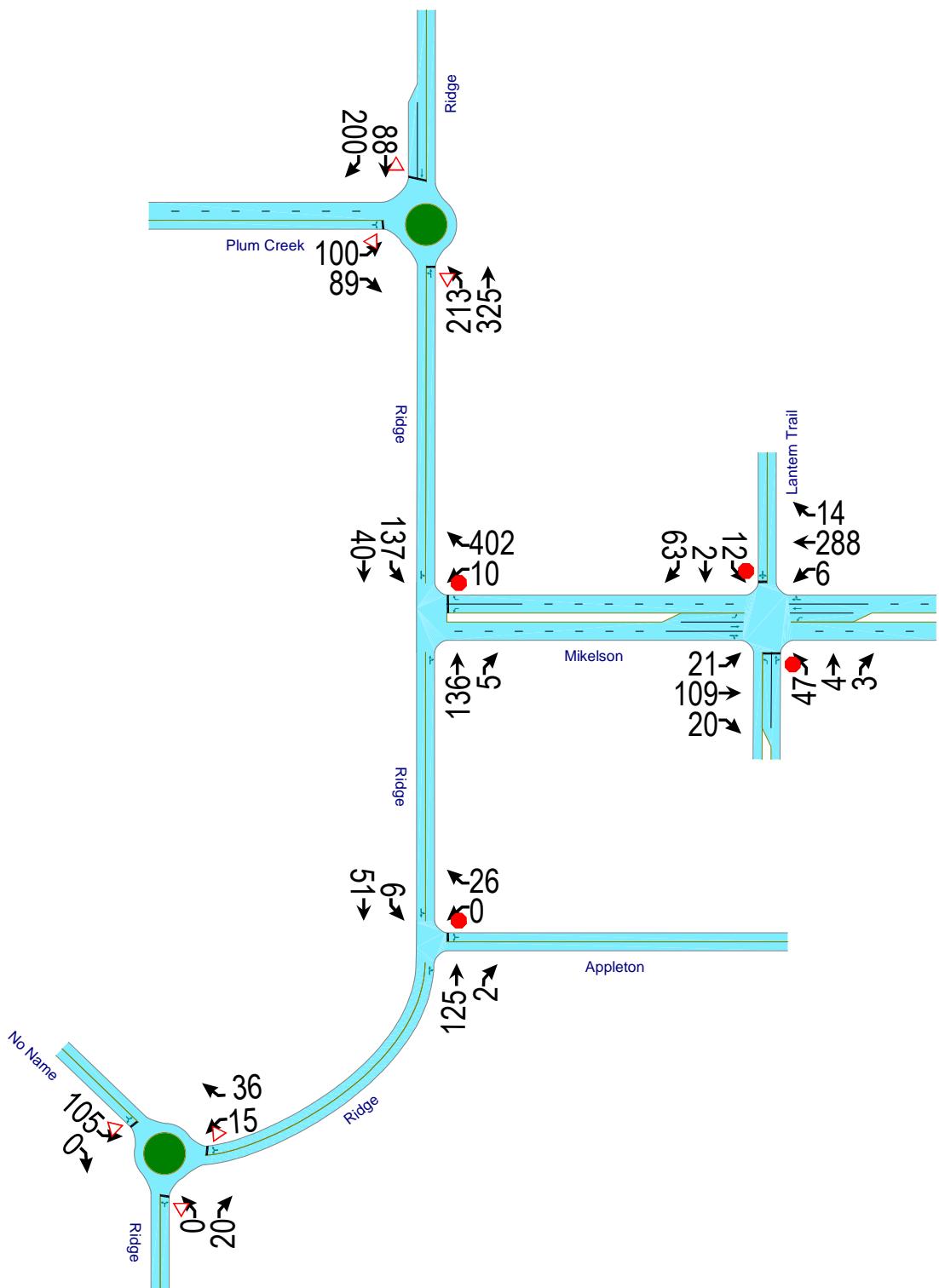


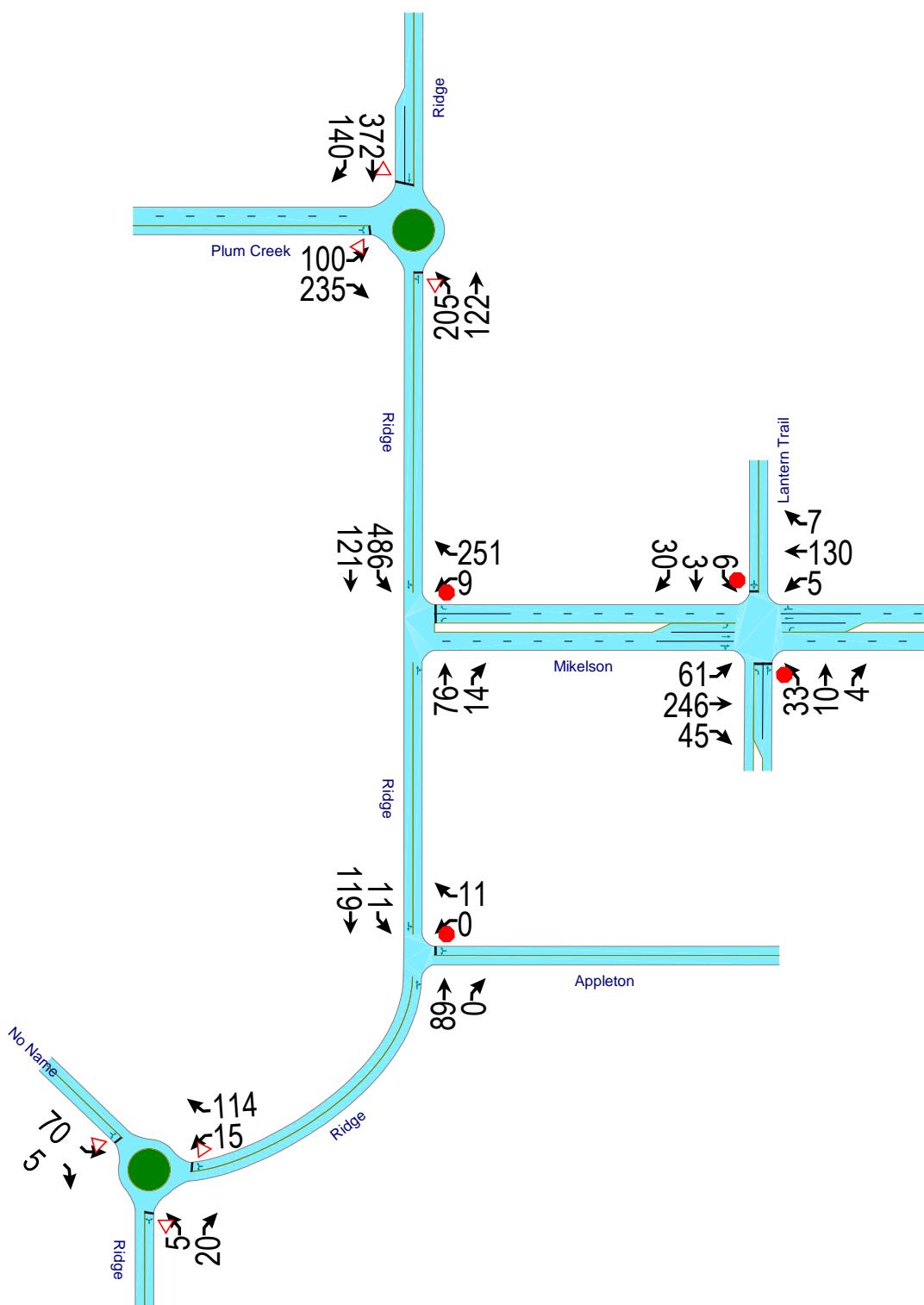
Oaks at Castle Rock

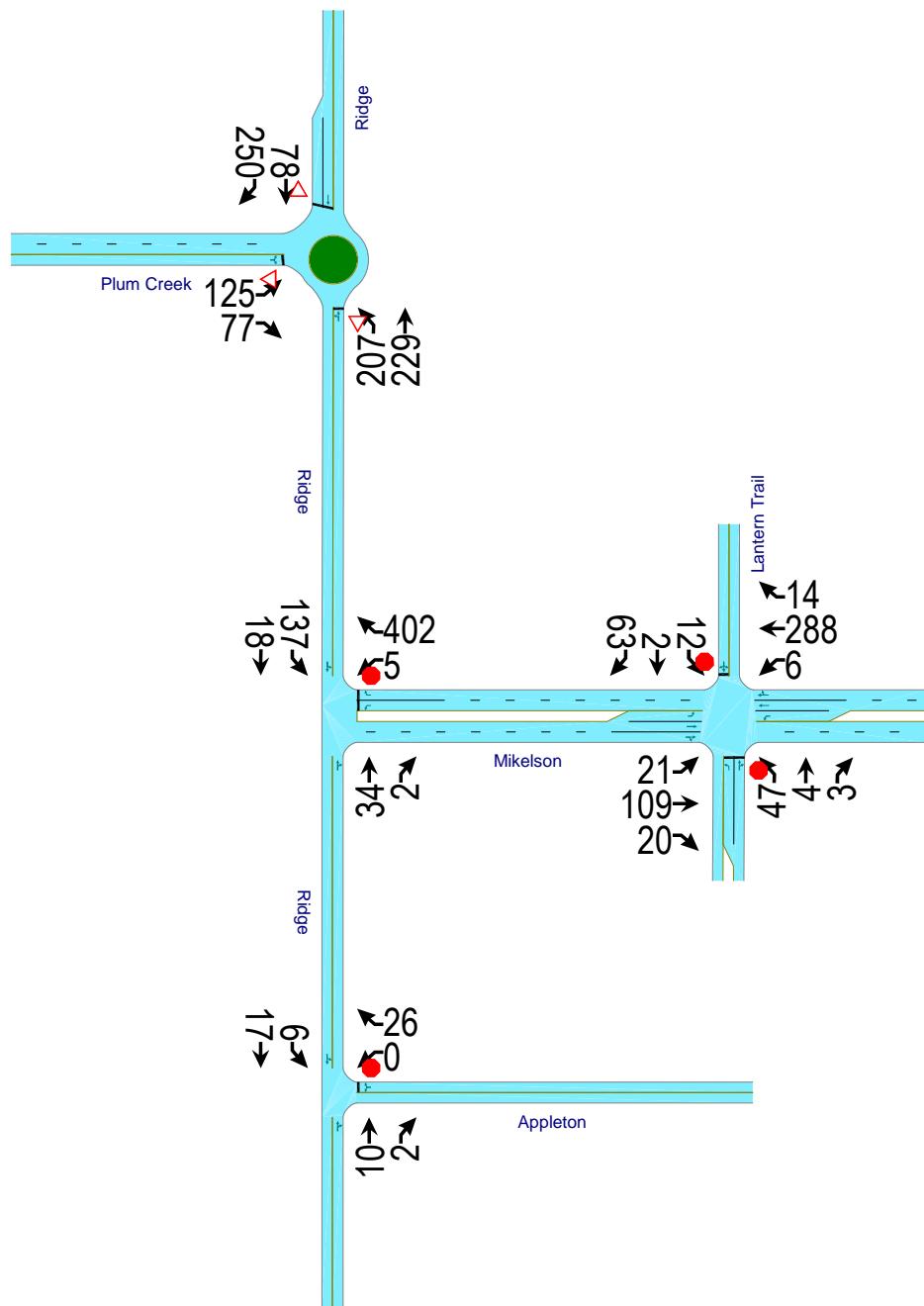
Figure 3  
Existing PM

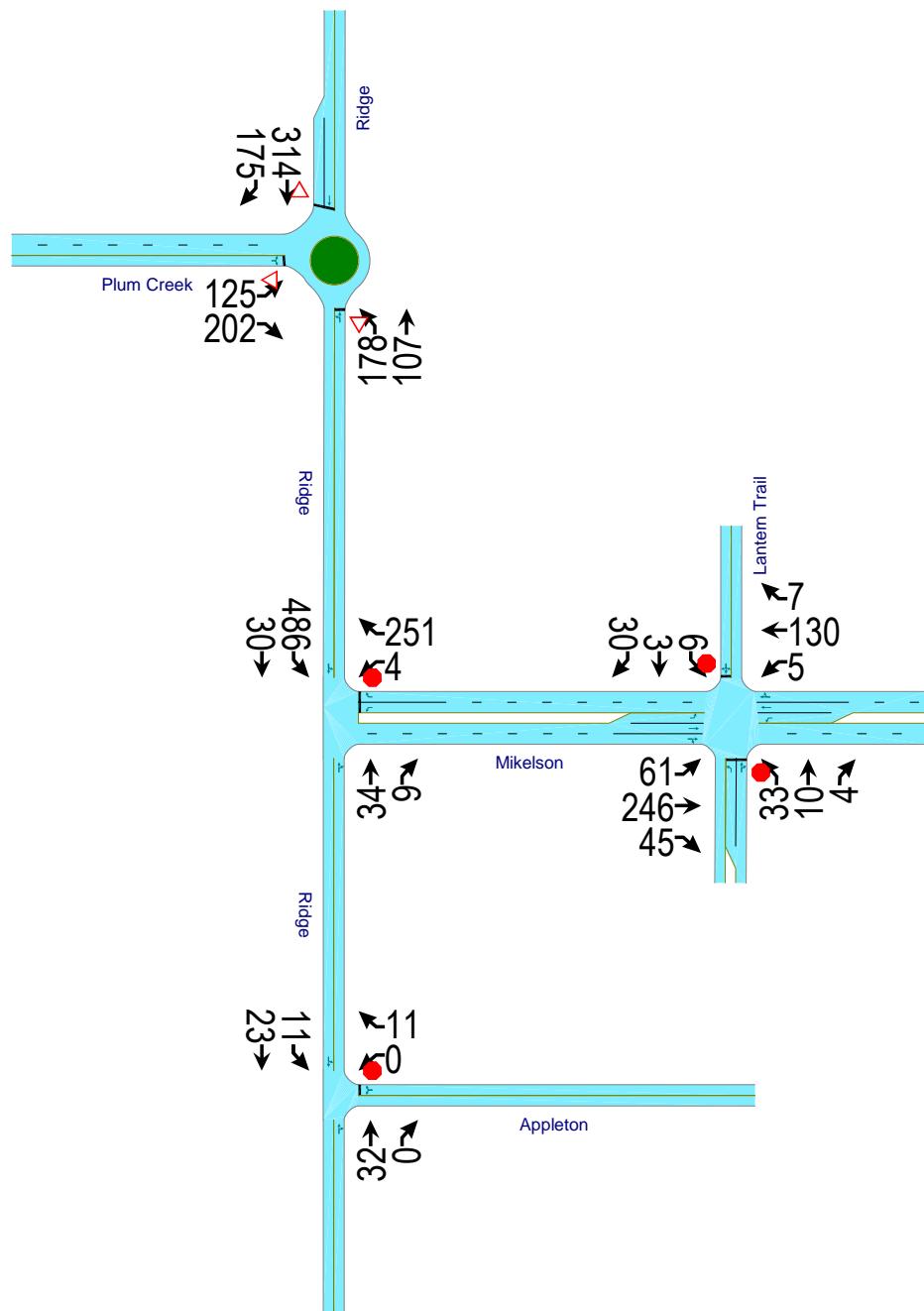






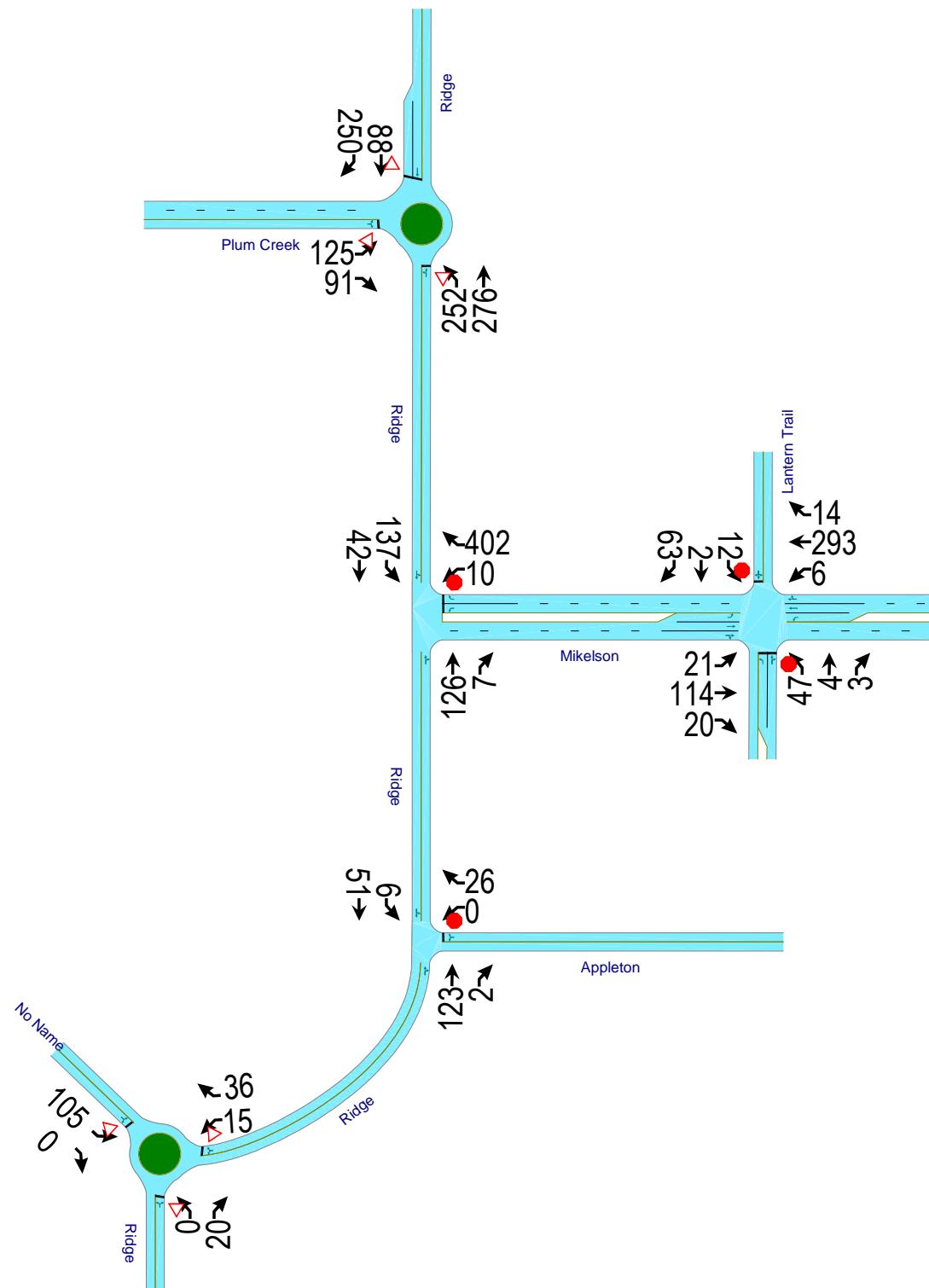


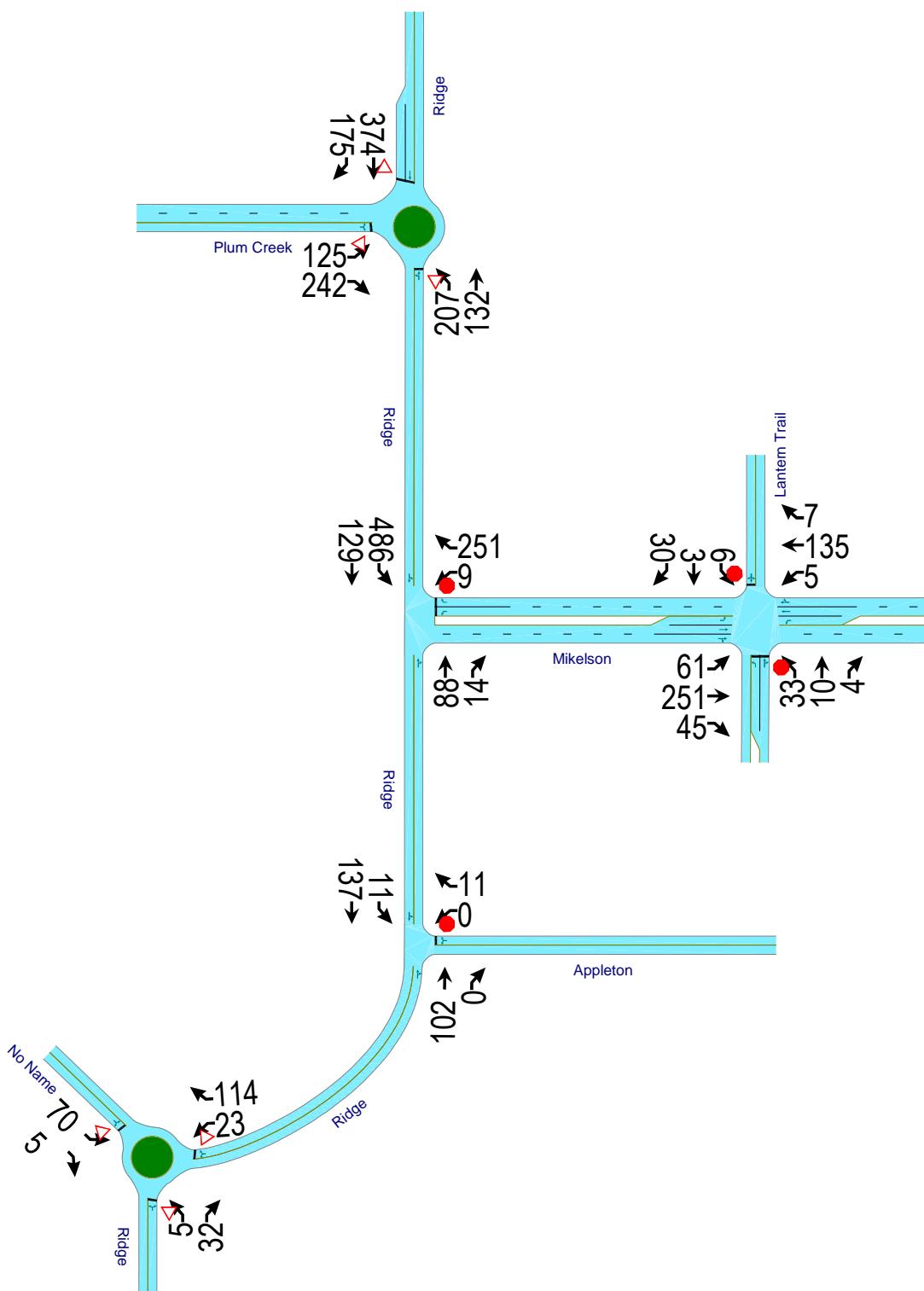




## Oaks at Castle Rock

**Figure 9  
2037 AM TOTAL**





Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	26	18	2	6	15
Future Vol, veh/h	0	26	18	2	6	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	20	2	7	16

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	50	21	0 0 22 0
Stage 1	21	-	- - -
Stage 2	29	-	- - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - -
Critical Hdwy Stg 2	5.42	-	- - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	959	1056	- - 1593 -
Stage 1	1002	-	- - -
Stage 2	994	-	- - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	955	1056	- - 1593 -
Mov Cap-2 Maneuver	955	-	- - -
Stage 1	1002	-	- - -
Stage 2	990	-	- - -

Approach	WB	NB	SB	
HCM Control Delay, s	8.5	0	2.1	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1056	1593	-
HCM Lane V/C Ratio	-	0.027	0.004	-
HCM Control Delay (s)	-	8.5	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0.1	0	-

Intersection

Int Delay, s/veh 9.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	5	402	27	2	137	14
Future Vol, veh/h	5	402	27	2	137	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	437	29	2	149	15

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	343	30	0 0 32 0
Stage 1	30	-	- - - -
Stage 2	313	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	653	1044	- - 1580 -
Stage 1	993	-	- - - -
Stage 2	741	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	591	1044	- - 1580 -
Mov Cap-2 Maneuver	591	-	- - - -
Stage 1	993	-	- - - -
Stage 2	671	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	10.9	0	6.8	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	591 1044 1580	-	
HCM Lane V/C Ratio	-	0.009 0.419 0.094	-	
HCM Control Delay (s)	-	11.1 10.9 7.5	0	
HCM Lane LOS	-	B B A A		
HCM 95th %tile Q(veh)	-	0 2.1 0.3	-	

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↓		↑	↑↓		↑	↑			↑	↑
Traffic Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Future Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	118	22	7	313	15	51	4	3	13	2	68

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	328	0	0	140	0	0	346	516	70	441	520	164
Stage 1	-	-	-	-	-	-	175	175	-	334	334	-
Stage 2	-	-	-	-	-	-	171	341	-	107	186	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1228	-	-	1441	-	-	584	461	978	500	459	852
Stage 1	-	-	-	-	-	-	810	753	-	653	642	-
Stage 2	-	-	-	-	-	-	814	637	-	887	745	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1228	-	-	1441	-	-	525	450	978	486	448	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	525	450	-	486	448	-
Stage 1	-	-	-	-	-	-	795	739	-	641	639	-
Stage 2	-	-	-	-	-	-	742	634	-	862	731	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.1	0.1			12.4			10.4			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	525	585	1228	-	-	1441	-	-	747		
HCM Lane V/C Ratio	0.097	0.013	0.019	-	-	0.005	-	-	0.112		
HCM Control Delay (s)	12.6	11.2	8	-	-	7.5	-	-	10.4		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0	0.1	-	-	0	-	-	0.4		

**Intersection**

Intersection Delay, s/veh 6.0  
Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	191	467	300
Demand Flow Rate, veh/h	195	476	306
Vehicles Circulating, veh/h	85	111	226
Vehicles Exiting, veh/h	226	169	361
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.3	9.2	1.4
Approach LOS	A	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	LR	LT	T	R
Assumed Moves	LR	LT	T	R
RT Channelized				Free
Lane Util	1.000	1.000	1.000	
Critical Headway, s	5.193	5.193	5.193	
Entry Flow, veh/h	195	476	85	221
Cap Entry Lane, veh/h	1038	1011	901	1938
Entry HV Adj Factor	0.979	0.981	0.980	0.980
Flow Entry, veh/h	191	467	83	217
Cap Entry, veh/h	1017	992	884	1900
V/C Ratio	0.188	0.471	0.094	0.114
Control Delay, s/veh	5.3	9.2	5.0	0.0
LOS	A	A	A	A
95th %tile Queue, veh	1	3	0	0

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	11	22	0	11	24
Future Vol, veh/h	0	11	22	0	11	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	24	0	12	26

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	74	24	0 0 24 0
Stage 1	24	-	- - - -
Stage 2	50	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	930	1052	- - 1591 -
Stage 1	999	-	- - - -
Stage 2	972	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	923	1052	- - 1591 -
Mov Cap-2 Maneuver	923	-	- - - -
Stage 1	999	-	- - - -
Stage 2	964	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	8.5	0	2.3	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1052	1591	-
HCM Lane V/C Ratio	-	- 0.011	0.008	-
HCM Control Delay (s)	-	- 8.5	7.3	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0	0	-

Intersection

Int Delay, s/veh 8.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	4	251	27	9	486	24
Future Vol, veh/h	4	251	27	9	486	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	273	29	10	528	26

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1117	34	0 0 39 0
Stage 1	34	-	- - -
Stage 2	1083	-	- - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - -
Critical Hdwy Stg 2	5.42	-	- - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	229	1039	- - 1571 -
Stage 1	988	-	- - -
Stage 2	325	-	- - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	151	1039	- - 1571 -
Mov Cap-2 Maneuver	151	-	- - -
Stage 1	988	-	- - -
Stage 2	214	-	- - -

Approach	WB	NB	SB	
HCM Control Delay, s	10	0	8.1	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 151 1039 1571	-	
HCM Lane V/C Ratio	-	- 0.029 0.263 0.336	-	
HCM Control Delay (s)	-	- 29.5 9.7 8.4	0	
HCM Lane LOS	-	- D A A	A	
HCM 95th %tile Q(veh)	-	- 0.1 1.1 1.5	-	

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑		↑	↑	↑
Traffic Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Future Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	267	49	5	141	8	36	11	4	7	3	33

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	149	0	0	316	0	0	507	584	158	428	605	74
Stage 1	-	-	-	-	-	-	424	424	-	156	156	-
Stage 2	-	-	-	-	-	-	83	160	-	272	449	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1430	-	-	1241	-	-	449	422	859	511	410	973
Stage 1	-	-	-	-	-	-	578	585	-	831	768	-
Stage 2	-	-	-	-	-	-	916	764	-	711	571	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1430	-	-	1241	-	-	415	401	859	479	390	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	415	401	-	479	390	-
Stage 1	-	-	-	-	-	-	551	558	-	793	765	-
Stage 2	-	-	-	-	-	-	878	761	-	662	545	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.3	0.3			14			10			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	415	473	1430	-	-	1241	-	-	764		
HCM Lane V/C Ratio	0.086	0.032	0.046	-	-	0.004	-	-	0.055		
HCM Control Delay (s)	14.5	12.9	7.6	-	-	7.9	-	-	10		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0	-	-	0.2		

**Intersection**

Intersection Delay, s/veh 7.1

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	326	302	489
Demand Flow Rate, veh/h	332	308	499
Vehicles Circulating, veh/h	344	111	194
Vehicles Exiting, veh/h	194	565	225
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.8	6.7	5.6
Approach LOS	A	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	LR	LT	T	R
Assumed Moves	LR	LT	T	R
RT Channelized				Free
Lane Util	1.000	1.000	1.000	
Critical Headway, s	5.193	5.193	5.193	
Entry Flow, veh/h	332	308	344	155
Cap Entry Lane, veh/h	801	1011	931	1938
Entry HV Adj Factor	0.982	0.980	0.980	0.980
Flow Entry, veh/h	326	302	337	152
Cap Entry, veh/h	787	991	912	1900
V/C Ratio	0.414	0.305	0.370	0.080
Control Delay, s/veh	9.8	6.7	8.1	0.0
LOS	A	A	A	A
95th %tile Queue, veh	2	1	2	0

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	26	115	2	6	44
Future Vol, veh/h	0	26	115	2	6	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	125	2	7	48

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	187	126	0 0 127 0
Stage 1	126	-	- - - -
Stage 2	61	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	802	924	- - 1459 -
Stage 1	900	-	- - - -
Stage 2	962	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	798	924	- - 1459 -
Mov Cap-2 Maneuver	798	-	- - - -
Stage 1	900	-	- - - -
Stage 2	957	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	9	0	0.9	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	924	1459	-
HCM Lane V/C Ratio	-	0.031	0.004	-
HCM Control Delay (s)	-	9	7.5	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0.1	0	-

Intersection

Int Delay, s/veh 8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	10	402	136	5	137	40
Future Vol, veh/h	10	402	136	5	137	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	437	148	5	149	43

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	492	151	0 0 153 0
Stage 1	151	-	- - - -
Stage 2	341	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	536	895	- - 1428 -
Stage 1	877	-	- - - -
Stage 2	720	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	479	895	- - 1428 -
Mov Cap-2 Maneuver	479	-	- - - -
Stage 1	877	-	- - - -
Stage 2	643	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	12.8	0	6	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	479 895 1428	-	
HCM Lane V/C Ratio	-	0.023 0.488 0.104	-	
HCM Control Delay (s)	-	12.7 12.8 7.8	0	
HCM Lane LOS	-	B B A A		
HCM 95th %tile Q(veh)	-	0.1 2.7 0.3	-	

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑			↑	↑
Traffic Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Future Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	118	22	7	313	15	51	4	3	13	2	68
Major/Minor												
Major1			Major2			Minor1			Minor2			
Conflicting Flow All	328	0	0	140	0	0	346	516	70	441	520	164
Stage 1	-	-	-	-	-	-	175	175	-	334	334	-
Stage 2	-	-	-	-	-	-	171	341	-	107	186	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1228	-	-	1441	-	-	584	461	978	500	459	852
Stage 1	-	-	-	-	-	-	810	753	-	653	642	-
Stage 2	-	-	-	-	-	-	814	637	-	887	745	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1228	-	-	1441	-	-	525	450	978	486	448	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	525	450	-	486	448	-
Stage 1	-	-	-	-	-	-	795	739	-	641	639	-
Stage 2	-	-	-	-	-	-	742	634	-	862	731	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	1.1		0.1		12.4		10.4					
HCM LOS					B		B					
Minor Lane/Major Mvmt												
Capacity (veh/h)	525	585	1228	-	-	1441	-	-	747			
HCM Lane V/C Ratio	0.097	0.013	0.019	-	-	0.005	-	-	0.112			
HCM Control Delay (s)	12.6	11.2	8	-	-	7.5	-	-	10.4			
HCM Lane LOS	B	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.3	0	0.1	-	-	0	-	-	0.4			

Intersection			
Intersection Delay, s/veh	7.7		
Intersection LOS	A		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	206	585	313
Demand Flow Rate, veh/h	210	597	319
Vehicles Circulating, veh/h	98	111	237
Vehicles Exiting, veh/h	237	197	471
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.5	11.7	1.6
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	T R
Assumed Moves	LR	LT	T R
RT Channelized			Free
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	210	597	98 221
Cap Entry Lane, veh/h	1024	1011	892 1938
Entry HV Adj Factor	0.981	0.980	0.980 0.980
Flow Entry, veh/h	206	585	96 217
Cap Entry, veh/h	1005	991	874 1900
V/C Ratio	0.205	0.590	0.110 0.114
Control Delay, s/veh	5.5	11.7	5.2 0.0
LOS	A	B	A A
95th %tile Queue, veh	1	4	0 0

**Intersection**

Intersection Delay, s/veh 3.9

Intersection LOS A

Approach	WB	NB	SE
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	48	22	105
Demand Flow Rate, veh/h	49	22	107
Vehicles Circulating, veh/h	0	107	16
Vehicles Exiting, veh/h	129	16	33
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.7	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LR	LR
Assumed Moves	LR	LR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	49	22	107
Cap Entry Lane, veh/h	1130	1015	1112
Entry HV Adj Factor	0.980	1.000	0.981
Flow Entry, veh/h	48	22	105
Cap Entry, veh/h	1107	1015	1091
V/C Ratio	0.043	0.022	0.096
Control Delay, s/veh	3.6	3.7	4.1
LOS	A	A	A
95th %tile Queue, veh	0	0	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			C
Traffic Volume (vph)	0	11	79	0	11	119
Future Volume (vph)	0	11	79	0	11	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865					
Flt Protected						0.996
Satd. Flow (prot)	1611	0	1863	0	0	1855
Flt Permitted						0.996
Satd. Flow (perm)	1611	0	1863	0	0	1855
Link Speed (mph)	30		45			45
Link Distance (ft)	480		489			430
Travel Time (s)	10.9		7.4			6.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	12	86	0	12	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	86	0	0	141
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
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		9	15	
Sign Control	Stop		Free			Free

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	11	79	0	11	119
Future Vol, veh/h	0	11	79	0	11	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	86	0	12	129

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	239	86	0 0 86 0
Stage 1	86	-	- - -
Stage 2	153	-	- - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - -
Critical Hdwy Stg 2	5.42	-	- - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	749	973	- - 1510 -
Stage 1	937	-	- - -
Stage 2	875	-	- - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	742	973	- - 1510 -
Mov Cap-2 Maneuver	742	-	- - -
Stage 1	937	-	- - -
Stage 2	867	-	- - -

Approach	WB	NB	SB	
HCM Control Delay, s	8.7	0	0.6	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	973	1510	-
HCM Lane V/C Ratio	-	0.012	0.008	-
HCM Control Delay (s)	-	8.7	7.4	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	9	251	76	14	486	121
Future Volume (vph)	9	251	76	14	486	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850	0.979			
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1770	1583	1824	0	0	1792
Flt Permitted	0.950				0.962	
Satd. Flow (perm)	1770	1583	1824	0	0	1792
Link Speed (mph)	35		45			45
Link Distance (ft)	453		430			515
Travel Time (s)	8.8		6.5			7.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	273	83	15	528	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	273	98	0	0	660
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
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		9	15	
Sign Control	Stop		Free			Free

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	9	251	76	14	486	121
Future Vol, veh/h	9	251	76	14	486	121
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	273	83	15	528	132

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1278	90	0 0 98 0
Stage 1	90	-	- - - -
Stage 2	1188	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	183	968	- - 1495 -
Stage 1	934	-	- - - -
Stage 2	289	-	- - - -
Platoon blocked, %		-	- - - -
Mov Cap-1 Maneuver	113	968	- - 1495 -
Mov Cap-2 Maneuver	113	-	- - - -
Stage 1	934	-	- - - -
Stage 2	179	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	11.2	0	7	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 113 968 1495	-	
HCM Lane V/C Ratio	-	- 0.087 0.282 0.353	-	
HCM Control Delay (s)	-	- 39.9 10.2 8.7	0	
HCM Lane LOS	-	- E B A	A	
HCM 95th %tile Q(veh)	-	- 0.3 1.2 1.6	-	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↓		↑	↑↓		↑	↑↓			↔	
Traffic Volume (vph)	61	246	45	5	130	7	33	10	4	6	3	30
Future Volume (vph)	61	246	45	5	130	7	33	10	4	6	3	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	80		0	100		0	0	0	0
Storage Lanes	1		0	1		0	1		0	0	0	0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.992			0.960			0.896	
Flt Protected	0.950			0.950			0.950				0.992	
Satd. Flow (prot)	1770	3458	0	1770	3511	0	1770	1788	0	0	1656	0
Flt Permitted	0.950			0.950			0.950				0.992	
Satd. Flow (perm)	1770	3458	0	1770	3511	0	1770	1788	0	0	1656	0
Link Speed (mph)	35			35			30				30	
Link Distance (ft)	453			224			188				219	
Travel Time (s)	8.8			4.4			4.3				5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	267	49	5	141	8	36	11	4	7	3	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	316	0	5	149	0	36	15	0	0	43	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)	12			12			12				0	
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
Sign Control	Free			Free			Stop			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	29.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑		↑	↑↑	
Traffic Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Future Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	267	49	5	141	8	36	11	4	7	3	33
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	316	0	0	507	584	158	428	605	74
Stage 1	-	-	-	-	-	-	424	424	-	156	156	-
Stage 2	-	-	-	-	-	-	83	160	-	272	449	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1430	-	-	1241	-	-	449	422	859	511	410	973
Stage 1	-	-	-	-	-	-	578	585	-	831	768	-
Stage 2	-	-	-	-	-	-	916	764	-	711	571	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1430	-	-	1241	-	-	415	401	859	479	390	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	415	401	-	479	390	-
Stage 1	-	-	-	-	-	-	551	558	-	793	765	-
Stage 2	-	-	-	-	-	-	878	761	-	662	545	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0.3			14			10		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	415	473	1430	-	-	1241	-	-	764			
HCM Lane V/C Ratio	0.086	0.032	0.046	-	-	0.004	-	-	0.055			
HCM Control Delay (s)	14.5	12.9	7.6	-	-	7.9	-	-	10			
HCM Lane LOS	B	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0	-	-	0.2			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	235	205	122	372	140
Future Volume (vph)	100	235	205	122	372	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	100			100
Storage Lanes	0	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.850	
Flt Protected	0.985			0.970		
Satd. Flow (prot)	1660	0	0	1807	1863	1583
Flt Permitted	0.985			0.970		
Satd. Flow (perm)	1660	0	0	1807	1863	1583
Link Speed (mph)	45			45	45	
Link Distance (ft)	368			515	285	
Travel Time (s)	5.6			7.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	255	223	133	404	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	0	0	356	404	152
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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
Sign Control	Yield			Yield	Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Intersection			
Intersection Delay, s/veh	8.6		
Intersection LOS	A		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	364	356	556
Demand Flow Rate, veh/h	371	363	567
Vehicles Circulating, veh/h	412	111	227
Vehicles Exiting, veh/h	227	672	247
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.1	7.4	7.1
Approach LOS	B	A	A
Lane	Left	Left	Left
Designated Moves	LR	LT	T R
Assumed Moves	LR	LT	T R
RT Channelized			Free
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	371	363	412 155
Cap Entry Lane, veh/h	748	1011	900 1938
Entry HV Adj Factor	0.981	0.982	0.980 0.980
Flow Entry, veh/h	364	356	404 152
Cap Entry, veh/h	734	993	883 1900
V/C Ratio	0.496	0.359	0.458 0.080
Control Delay, s/veh	12.1	7.4	9.8 0.0
LOS	B	A	A A
95th %tile Queue, veh	3	2	2 0



Lane Group	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	15	104	5	20	59	5
Future Volume (vph)	15	104	5	20	59	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.882		0.890		0.990	
Flt Protected	0.994		0.991		0.956	
Satd. Flow (prot)	1633	0	1643	0	1763	0
Flt Permitted	0.994		0.991		0.956	
Satd. Flow (perm)	1633	0	1643	0	1763	0
Link Speed (mph)	45		45		30	
Link Distance (ft)	489		180		194	
Travel Time (s)	7.4		2.7		4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	113	5	22	64	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	27	0	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	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	15	9
Sign Control	Yield		Yield		Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 24.2%

ICU Level of Service A

Analysis Period (min) 15

**Intersection**

Intersection Delay, s/veh	4.0		
Intersection LOS	A		
Approach	WB	NB	SE
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	129	27	69
Demand Flow Rate, veh/h	131	27	70
Vehicles Circulating, veh/h	5	65	16
Vehicles Exiting, veh/h	87	21	120
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	3.6	3.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LR	LR
Assumed Moves	LR	LR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	131	27	70
Cap Entry Lane, veh/h	1124	1059	1112
Entry HV Adj Factor	0.985	1.000	0.986
Flow Entry, veh/h	129	27	69
Cap Entry, veh/h	1107	1059	1096
V/C Ratio	0.117	0.025	0.063
Control Delay, s/veh	4.3	3.6	3.8
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Intersection

Int Delay, s/veh 4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	26	10	2	6	17
Future Vol, veh/h	0	26	10	2	6	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	11	2	7	18

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	44	12	0 0 13 0
Stage 1	12	-	- - - -
Stage 2	32	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	967	1069	- - 1606 -
Stage 1	1011	-	- - - -
Stage 2	991	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	963	1069	- - 1606 -
Mov Cap-2 Maneuver	963	-	- - - -
Stage 1	1011	-	- - - -
Stage 2	987	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	8.5	0	1.9	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1069	1606	-
HCM Lane V/C Ratio	-	- 0.026	0.004	-
HCM Control Delay (s)	-	- 8.5	7.3	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0.1	0	-

Intersection

Int Delay, s/veh 9.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	5	402	27	2	137	14
Future Vol, veh/h	5	402	27	2	137	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	437	37	2	149	19

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	355	38	0 0 39 0
Stage 1	38	-	- - - -
Stage 2	317	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	643	1034	- - 1571 -
Stage 1	984	-	- - - -
Stage 2	738	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	581	1034	- - 1571 -
Mov Cap-2 Maneuver	581	-	- - - -
Stage 1	984	-	- - - -
Stage 2	667	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	11	0	6.7	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	581 1034 1571	-	
HCM Lane V/C Ratio	-	0.009 0.423 0.095	-	
HCM Control Delay (s)	-	11.3 11 7.5	0	
HCM Lane LOS	-	B B A A		
HCM 95th %tile Q(veh)	-	0 2.1 0.3	-	

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑		↑	↑	↑
Traffic Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Future Vol, veh/h	21	109	20	6	288	14	47	4	3	12	2	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	118	22	7	313	15	51	4	3	13	2	68

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	328	0	0	140	0	0	346	516	70	441	520	164
Stage 1	-	-	-	-	-	-	175	175	-	334	334	-
Stage 2	-	-	-	-	-	-	171	341	-	107	186	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1228	-	-	1441	-	-	584	461	978	500	459	852
Stage 1	-	-	-	-	-	-	810	753	-	653	642	-
Stage 2	-	-	-	-	-	-	814	637	-	887	745	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1228	-	-	1441	-	-	525	450	978	486	448	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	525	450	-	486	448	-
Stage 1	-	-	-	-	-	-	795	739	-	641	639	-
Stage 2	-	-	-	-	-	-	742	634	-	862	731	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.1	0.1			12.4			10.4			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	525	585	1228	-	-	1441	-	-	747		
HCM Lane V/C Ratio	0.097	0.013	0.019	-	-	0.005	-	-	0.112		
HCM Control Delay (s)	12.6	11.2	8	-	-	7.5	-	-	10.4		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0	0.1	-	-	0	-	-	0.4		

Intersection			
Intersection Delay, s/veh	6.0		
Intersection LOS	A		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	220	474	357
Demand Flow Rate, veh/h	225	484	364
Vehicles Circulating, veh/h	87	139	229
Vehicles Exiting, veh/h	229	173	393
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.6	9.8	1.2
Approach LOS	A	A	A
Lane	Left	Left	Bypass
Designated Moves	LR	LT	T R
Assumed Moves	LR	LT	T R
RT Channelized			Free
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	225	484	87 277
Cap Entry Lane, veh/h	1036	983	899 1938
Entry HV Adj Factor	0.978	0.979	0.980 0.980
Flow Entry, veh/h	220	474	85 272
Cap Entry, veh/h	1013	963	881 1900
V/C Ratio	0.217	0.492	0.097 0.143
Control Delay, s/veh	5.6	9.8	5.0 0.0
LOS	A	A	A A
95th %tile Queue, veh	1	3	0 0

Intersection

Int Delay, s/veh 2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	11	32	0	11	23
Future Vol, veh/h	0	11	32	0	11	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	35	0	12	25

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	84	35	0 0 35 0
Stage 1	35	-	- - - -
Stage 2	49	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	918	1038	- - 1576 -
Stage 1	987	-	- - - -
Stage 2	973	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	911	1038	- - 1576 -
Mov Cap-2 Maneuver	911	-	- - - -
Stage 1	987	-	- - - -
Stage 2	965	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	8.5	0	2.4	
HCM LOS	A			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1038	1576	-
HCM Lane V/C Ratio	-	- 0.012	0.008	-
HCM Control Delay (s)	-	- 8.5	7.3	0
HCM Lane LOS	-	- A	A	A
HCM 95th %tile Q(veh)	-	- 0	0	-

Intersection

Int Delay, s/veh 8.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	4	251	27	9	486	24
Future Vol, veh/h	4	251	27	9	486	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	273	37	10	528	33

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1131	42	0 0 46 0
Stage 1	42	-	- - - -
Stage 2	1089	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	225	1029	- - 1562 -
Stage 1	980	-	- - - -
Stage 2	323	-	- - - -
Platoon blocked, %		-	- - - -
Mov Cap-1 Maneuver	148	1029	- - 1562 -
Mov Cap-2 Maneuver	148	-	- - - -
Stage 1	980	-	- - - -
Stage 2	212	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	10.1	0	8	
HCM LOS	B			
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Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	148 1029 1562	-	
HCM Lane V/C Ratio	-	0.029 0.265 0.338	-	
HCM Control Delay (s)	-	30.1 9.8 8.5	0	
HCM Lane LOS	-	D A A A		
HCM 95th %tile Q(veh)	-	0.1 1.1 1.5	-	

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑		↑	↑	↑
Traffic Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Future Vol, veh/h	61	246	45	5	130	7	33	10	4	6	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	267	49	5	141	8	36	11	4	7	3	33

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	149	0	0	316	0	0	507	584	158	428	605	74
Stage 1	-	-	-	-	-	-	424	424	-	156	156	-
Stage 2	-	-	-	-	-	-	83	160	-	272	449	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1430	-	-	1241	-	-	449	422	859	511	410	973
Stage 1	-	-	-	-	-	-	578	585	-	831	768	-
Stage 2	-	-	-	-	-	-	916	764	-	711	571	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1430	-	-	1241	-	-	415	401	859	479	390	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	415	401	-	479	390	-
Stage 1	-	-	-	-	-	-	551	558	-	793	765	-
Stage 2	-	-	-	-	-	-	878	761	-	662	545	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.3	0.3			14			10			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	415	473	1430	-	-	1241	-	-	764		
HCM Lane V/C Ratio	0.086	0.032	0.046	-	-	0.004	-	-	0.055		
HCM Control Delay (s)	14.5	12.9	7.6	-	-	7.9	-	-	10		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0	-	-	0.2		

Intersection

Intersection Delay, s/veh 7.3

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	356	309	531
Demand Flow Rate, veh/h	363	315	542
Vehicles Circulating, veh/h	348	139	197
Vehicles Exiting, veh/h	197	572	257
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.7	7.1	5.3
Approach LOS	B	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	LR	LT	T	R
Assumed Moves	LR	LT	T	R
RT Channelized				Free
Lane Util	1.000	1.000	1.000	
Critical Headway, s	5.193	5.193	5.193	
Entry Flow, veh/h	363	315	348	194
Cap Entry Lane, veh/h	798	983	928	1938
Entry HV Adj Factor	0.981	0.980	0.980	0.980
Flow Entry, veh/h	356	309	341	190
Cap Entry, veh/h	782	964	910	1900
V/C Ratio	0.455	0.320	0.375	0.100
Control Delay, s/veh	10.7	7.1	8.2	0.0
LOS	B	A	A	A
95th %tile Queue, veh	2	1	2	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			R
Traffic Volume (vph)	0	26	115	2	6	44
Future Volume (vph)	0	26	115	2	6	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.865		0.998			
Flt Protected						0.994
Satd. Flow (prot)	1611	0	1859	0	0	1852
Flt Permitted						0.994
Satd. Flow (perm)	1611	0	1859	0	0	1852
Link Speed (mph)	30		45			45
Link Distance (ft)	480		489			430
Travel Time (s)	10.9		7.4			6.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	28	125	2	7	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	0	127	0	0	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
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		9	15	
Sign Control	Stop		Free			Free

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 17.4%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	26	115	2	6	44
Future Vol, veh/h	0	26	115	2	6	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	125	2	7	48

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	187	126	0 0 127 0
Stage 1	126	-	- - - -
Stage 2	61	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	802	924	- - 1459 -
Stage 1	900	-	- - - -
Stage 2	962	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	798	924	- - 1459 -
Mov Cap-2 Maneuver	798	-	- - - -
Stage 1	900	-	- - - -
Stage 2	957	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.9
HCM LOS	A		
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT
Capacity (veh/h)	-	924	1459 -
HCM Lane V/C Ratio	-	0.031	0.004 -
HCM Control Delay (s)	-	9	7.5 0
HCM Lane LOS	-	A	A A
HCM 95th %tile Q(veh)	-	0.1	0 -



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	10	402	126	7	137	42
Future Volume (vph)	10	402	126	7	137	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850	0.993			
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1770	1583	1850	0	0	1794
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1770	1583	1850	0	0	1794
Link Speed (mph)	35		45			45
Link Distance (ft)	453		430			515
Travel Time (s)	8.8		6.5			7.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	437	137	8	149	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	437	145	0	0	195
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
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		9	15	
Sign Control	Stop		Free		Free	

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 38.6%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 8.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	10	402	126	7	137	42
Future Vol, veh/h	10	402	126	7	137	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	437	137	8	149	46

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	484	141	0 0 145 0
Stage 1	141	-	- - - -
Stage 2	343	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	542	907	- - 1437 -
Stage 1	886	-	- - - -
Stage 2	719	-	- - - -
Platoon blocked, %		-	- - - -
Mov Cap-1 Maneuver	485	907	- - 1437 -
Mov Cap-2 Maneuver	485	-	- - - -
Stage 1	886	-	- - - -
Stage 2	643	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	12.6	0	6	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	485 907 1437	-	
HCM Lane V/C Ratio	-	0.022 0.482 0.104	-	
HCM Control Delay (s)	-	12.6 12.6 7.8	0	
HCM Lane LOS	-	B B A A		
HCM 95th %tile Q(veh)	-	0.1 2.7 0.3	-	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↓		↑	↑↑↓		↑	↑↓			↔	
Traffic Volume (vph)	21	114	20	6	293	14	47	4	3	12	2	63
Future Volume (vph)	21	114	20	6	293	14	47	4	3	12	2	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	80		0	100		0	0	0	0
Storage Lanes	1		0	1		0	1		0	0	0	0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.993			0.936			0.889	
Flt Protected	0.950			0.950			0.950				0.992	
Satd. Flow (prot)	1770	3458	0	1770	3514	0	1770	1744	0	0	1643	0
Flt Permitted	0.950			0.950			0.950				0.992	
Satd. Flow (perm)	1770	3458	0	1770	3514	0	1770	1744	0	0	1643	0
Link Speed (mph)	35			35			30				30	
Link Distance (ft)	453			224			188				219	
Travel Time (s)	8.8			4.4			4.3				5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	124	22	7	318	15	51	4	3	13	2	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	146	0	7	333	0	51	7	0	0	83	0
Enter Blocked Intersection	No	No	No	No								
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12			12			12				0	
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
Sign Control		Free			Free			Stop		Stop		

#### Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.2%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↓		↑	↑↓		↑	↑		↑	↑	↑↓
Traffic Vol, veh/h	21	114	20	6	293	14	47	4	3	12	2	63
Future Vol, veh/h	21	114	20	6	293	14	47	4	3	12	2	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	124	22	7	318	15	51	4	3	13	2	68

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	334	0	0	146	0	0	353	527	73	449	530	167
Stage 1	-	-	-	-	-	-	180	180	-	339	339	-
Stage 2	-	-	-	-	-	-	173	347	-	110	191	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1222	-	-	1434	-	-	577	455	974	493	453	848
Stage 1	-	-	-	-	-	-	804	749	-	649	638	-
Stage 2	-	-	-	-	-	-	812	633	-	883	741	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1222	-	-	1434	-	-	519	444	974	479	442	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	519	444	-	479	442	-
Stage 1	-	-	-	-	-	-	789	735	-	637	635	-
Stage 2	-	-	-	-	-	-	740	630	-	858	727	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.1	0.1			12.5			10.5			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	519	579	1222	-	-	1434	-	-	741		
HCM Lane V/C Ratio	0.098	0.013	0.019	-	-	0.005	-	-	0.113		
HCM Control Delay (s)	12.7	11.3	8	-	-	7.5	-	-	10.5		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0	0.1	-	-	0	-	-	0.4		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	Y
Traffic Volume (vph)	125	91	252	276	88	250
Future Volume (vph)	125	91	252	276	88	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	100			100
Storage Lanes	0	0	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.943				0.850	
Flt Protected	0.972			0.977		
Satd. Flow (prot)	1707	0	0	1820	1863	1583
Flt Permitted	0.972			0.977		
Satd. Flow (perm)	1707	0	0	1820	1863	1583
Link Speed (mph)	45			45	45	
Link Distance (ft)	368			515	285	
Travel Time (s)	5.6			7.8	4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	136	99	274	300	96	272
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	0	0	574	96	272
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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
Sign Control	Yield			Yield	Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 54.3%

ICU Level of Service A

Analysis Period (min) 15

**Intersection**

Intersection Delay, s/veh 7.5

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	235	574	368
Demand Flow Rate, veh/h	240	585	375
Vehicles Circulating, veh/h	98	139	279
Vehicles Exiting, veh/h	279	199	445
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.9	12.0	1.4
Approach LOS	A	B	A

Lane	Left	Left	Left	Bypass
Designated Moves	LR	LT	T	R
Assumed Moves	LR	LT	T	R
RT Channelized				Free
Lane Util	1.000	1.000	1.000	
Critical Headway, s	5.193	5.193	5.193	
Entry Flow, veh/h	240	585	98	277
Cap Entry Lane, veh/h	1024	983	855	1938
Entry HV Adj Factor	0.979	0.981	0.980	0.980
Flow Entry, veh/h	235	574	96	272
Cap Entry, veh/h	1003	965	838	1900
V/C Ratio	0.234	0.595	0.115	0.143
Control Delay, s/veh	5.9	12.0	5.4	0.0
LOS	A	B	A	A
95th %tile Queue, veh	1	4	0	0



Lane Group	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	15	29	0	20	97	0
Future Volume (vph)	15	29	0	20	97	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.910		0.865			
Flt Protected	0.984				0.950	
Satd. Flow (prot)	1668	0	1611	0	1770	0
Flt Permitted	0.984				0.950	
Satd. Flow (perm)	1668	0	1611	0	1770	0
Link Speed (mph)	45		45		30	
Link Distance (ft)	489		180		194	
Travel Time (s)	7.4		2.7		4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	32	0	22	105	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	22	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	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	15	9
Sign Control	Yield		Yield		Yield	

#### Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 22.0%

ICU Level of Service A

Analysis Period (min) 15

**Intersection**

Intersection Delay, s/veh 3.9

Intersection LOS A

Approach	WB	NB	SE
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	48	22	105
Demand Flow Rate, veh/h	49	22	107
Vehicles Circulating, veh/h	0	107	16
Vehicles Exiting, veh/h	129	16	33
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.7	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LR	LR
Assumed Moves	LR	LR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	49	22	107
Cap Entry Lane, veh/h	1130	1015	1112
Entry HV Adj Factor	0.980	1.000	0.981
Flow Entry, veh/h	48	22	105
Cap Entry, veh/h	1107	1015	1091
V/C Ratio	0.043	0.022	0.096
Control Delay, s/veh	3.6	3.7	4.1
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		B		W	B
Traffic Vol, veh/h	0	11	91	0	11	127
Future Vol, veh/h	0	11	91	0	11	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	99	0	12	138

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	261	99	0 0 99 0
Stage 1	99	-	- - - -
Stage 2	162	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	728	957	- - 1494 -
Stage 1	925	-	- - - -
Stage 2	867	-	- - - -
Platoon blocked, %		- -	- -
Mov Cap-1 Maneuver	721	957	- - 1494 -
Mov Cap-2 Maneuver	721	-	- - - -
Stage 1	925	-	- - - -
Stage 2	859	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0.6
HCM LOS	A		
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL SBT
Capacity (veh/h)	-	957	1494 -
HCM Lane V/C Ratio	-	0.012	0.008 -
HCM Control Delay (s)	-	8.8	7.4 0
HCM Lane LOS	-	A	A A
HCM 95th %tile Q(veh)	-	0	0 -

Intersection

Int Delay, s/veh 7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	
Traffic Vol, veh/h	9	251	88	14	486	129
Future Vol, veh/h	9	251	88	14	486	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	273	96	15	528	140

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1300	103	0 0 111 0
Stage 1	103	-	- - - -
Stage 2	1197	-	- - - -
Critical Hdwy	6.42	6.22	- - 4.12 -
Critical Hdwy Stg 1	5.42	-	- - - -
Critical Hdwy Stg 2	5.42	-	- - - -
Follow-up Hdwy	3.518	3.318	- - 2.218 -
Pot Cap-1 Maneuver	178	952	- - 1479 -
Stage 1	921	-	- - - -
Stage 2	286	-	- - - -
Platoon blocked, %		-	- - - -
Mov Cap-1 Maneuver	109	952	- - 1479 -
Mov Cap-2 Maneuver	109	-	- - - -
Stage 1	921	-	- - - -
Stage 2	175	-	- - - -

Approach	WB	NB	SB	
HCM Control Delay, s	11.4	0	6.9	
HCM LOS	B			
<hr/>				
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	109 952 1479	-	
HCM Lane V/C Ratio	-	0.09 0.287 0.357	-	
HCM Control Delay (s)	-	41.3 10.3 8.8	0	
HCM Lane LOS	-	E B A A		
HCM 95th %tile Q(veh)	-	0.3 1.2 1.6	-	

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑		↑	↑		↑	↑	↑
Traffic Vol, veh/h	61	251	45	5	135	7	33	10	4	6	3	30
Future Vol, veh/h	61	251	45	5	135	7	33	10	4	6	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	80	-	-	80	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	273	49	5	147	8	36	11	4	7	3	33

Major/Minor	Major1	Major2			Minor1			Minor2				
Conflicting Flow All	154	0	0	322	0	0	516	595	161	435	615	77
Stage 1	-	-	-	-	-	-	430	430	-	161	161	-
Stage 2	-	-	-	-	-	-	86	165	-	274	454	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1424	-	-	1235	-	-	442	416	855	505	405	968
Stage 1	-	-	-	-	-	-	574	582	-	825	764	-
Stage 2	-	-	-	-	-	-	912	761	-	709	568	-
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1424	-	-	1235	-	-	408	395	855	473	385	968
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	395	-	473	385	-
Stage 1	-	-	-	-	-	-	547	555	-	787	761	-
Stage 2	-	-	-	-	-	-	874	758	-	660	542	-

Approach	EB	WB			NB			SB			
HCM Control Delay, s	1.3	0.3			14.2			10			
HCM LOS					B			B			
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	408	467	1424	-	-	1235	-	-	758		
HCM Lane V/C Ratio	0.088	0.033	0.047	-	-	0.004	-	-	0.056		
HCM Control Delay (s)	14.7	13	7.7	-	-	7.9	-	-	10		
HCM Lane LOS	B	B	A	-	-	A	-	-	B		
HCM 95th %tile Q(veh)	0.3	0.1	0.1	-	-	0	-	-	0.2		

**Intersection**

Intersection Delay, s/veh 9.0

Intersection LOS A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	399	368	597
Demand Flow Rate, veh/h	407	376	609
Vehicles Circulating, veh/h	415	139	229
Vehicles Exiting, veh/h	229	683	285
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	13.4	7.9	6.7
Approach LOS	B	A	A

Lane	Left	Left	Left	Bypass
Designated Moves	LR	LT	T	R
Assumed Moves	LR	LT	T	R
RT Channelized				Free
Lane Util	1.000	1.000	1.000	
Critical Headway, s	5.193	5.193	5.193	
Entry Flow, veh/h	407	376	415	194
Cap Entry Lane, veh/h	746	983	899	1938
Entry HV Adj Factor	0.980	0.979	0.980	0.980
Flow Entry, veh/h	399	368	407	190
Cap Entry, veh/h	731	963	881	1900
V/C Ratio	0.545	0.382	0.462	0.100
Control Delay, s/veh	13.4	7.9	9.9	0.0
LOS	B	A	A	A
95th %tile Queue, veh	3	2	2	0

**Intersection**

Intersection Delay, s/veh 4.1

Intersection LOS A

Approach	WB	NB	SE
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	138	40	69
Demand Flow Rate, veh/h	141	41	70
Vehicles Circulating, veh/h	5	65	25
Vehicles Exiting, veh/h	101	30	120
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.4	3.8	3.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LR	LR
Assumed Moves	LR	LR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	141	41	70
Cap Entry Lane, veh/h	1124	1059	1102
Entry HV Adj Factor	0.979	0.976	0.986
Flow Entry, veh/h	138	40	69
Cap Entry, veh/h	1100	1033	1086
V/C Ratio	0.125	0.039	0.064
Control Delay, s/veh	4.4	3.8	3.9
LOS	A	A	A
95th %tile Queue, veh	0	0	0

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

# Turn Count Summary

**Location:** S Ridge Rd at Appleton Way, Castle Rock, Co

**GPS Coordinates: Lat=39.356110, Lon=-104.812002**

Date: 2017-01-10

**Day of week:** Tuesday

## **Weather:**

**Analyst:** Jmwaldridge

## Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:45	2	3	0	0	0	1	0	6	0	0	0	0	12
17:00	1	9	0	0	0	5	0	6	0	0	0	0	21
17:15	5	8	0	0	0	2	0	6	0	0	0	0	21
17:30	3	4	0	0	0	3	0	4	0	0	0	0	14

# Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:45	2	3	0	0	0	1	0	6	0	0	0	0	12
17:00	1	9	0	0	0	5	0	6	0	0	0	0	21
17:15	5	8	0	0	0	2	0	6	0	0	0	0	21
17:30	3	4	0	0	0	3	0	4	0	0	0	0	14

## Pedestrian volumes

# Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	11	24	0	0	0	11	0	22	0	0	0	0	68
Factor	0.55	0.67	0.00	0.00	0.00	0.55	0.00	0.92	0.00	0.00	0.00	0.00	0.81
Approach Factor	0.67			0.55			0.92			0.00			

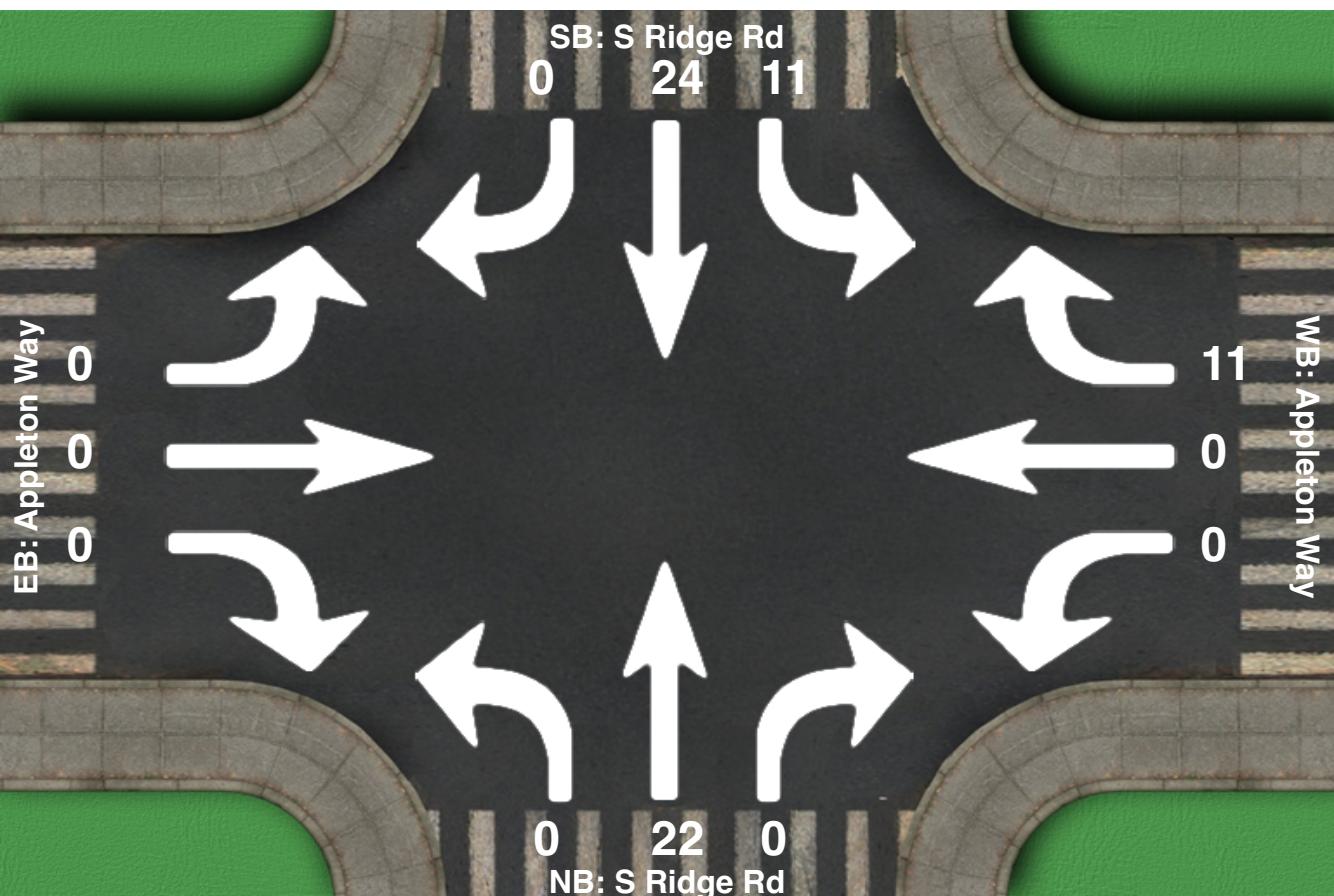
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	11	24	0	0	0	11	0	22	0	0	0	0	68

## Peak Hour Pedestrians

# Intersection Peak Hour

**Location:** S Ridge Rd at Appleton Way, Castle Rock, Co  
**GPS Coordinates:** Lat=39.356110, Lon=-104.812002  
**Date:** 2017-01-10  
**Day of week:** Tuesday  
**Weather:**  
**Analyst:** Jmwaldridge



# Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	11	24	0	0	0	11	0	22	0	0	0	0	68
Factor	0.55	0.67	0.00	0.00	0.00	0.55	0.00	0.92	0.00	0.00	0.00	0.00	0.81
Approach Factor	0.67			0.55			0.92			0.00			

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

# Turn Count Summary

**Location:** S Ridge Rd at Appleton Way, Castle Rock, Co

**GPS Coordinates: Lat=39.356110, Lon=-104.812002**

Date: 2017-01-11

**Day of week:** Wednesday

## **Weather:**

**Analyst:** Jmwaldridge

## Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:15	2	3	0	0	0	10	0	6	2	0	0	0	23
07:30	1	4	0	0	0	6	0	3	0	0	0	0	14
07:45	1	3	0	0	0	6	0	3	0	0	0	0	13
08:00	2	5	0	0	0	4	0	6	0	0	0	0	17

# Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:15	2	3	0	0	0	10	0	6	2	0	0	0	23
07:30	1	4	0	0	0	6	0	3	0	0	0	0	14
07:45	1	3	0	0	0	6	0	3	0	0	0	0	13
08:00	2	5	0	0	0	4	0	6	0	0	0	0	17

## Pedestrian volumes

# Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	15	0	0	0	26	0	18	2	0	0	0	67
Factor	0.75	0.75	0.00	0.00	0.00	0.65	0.00	0.75	0.25	0.00	0.00	0.00	0.73
Approach Factor	0.75			0.65			0.62			0.00			

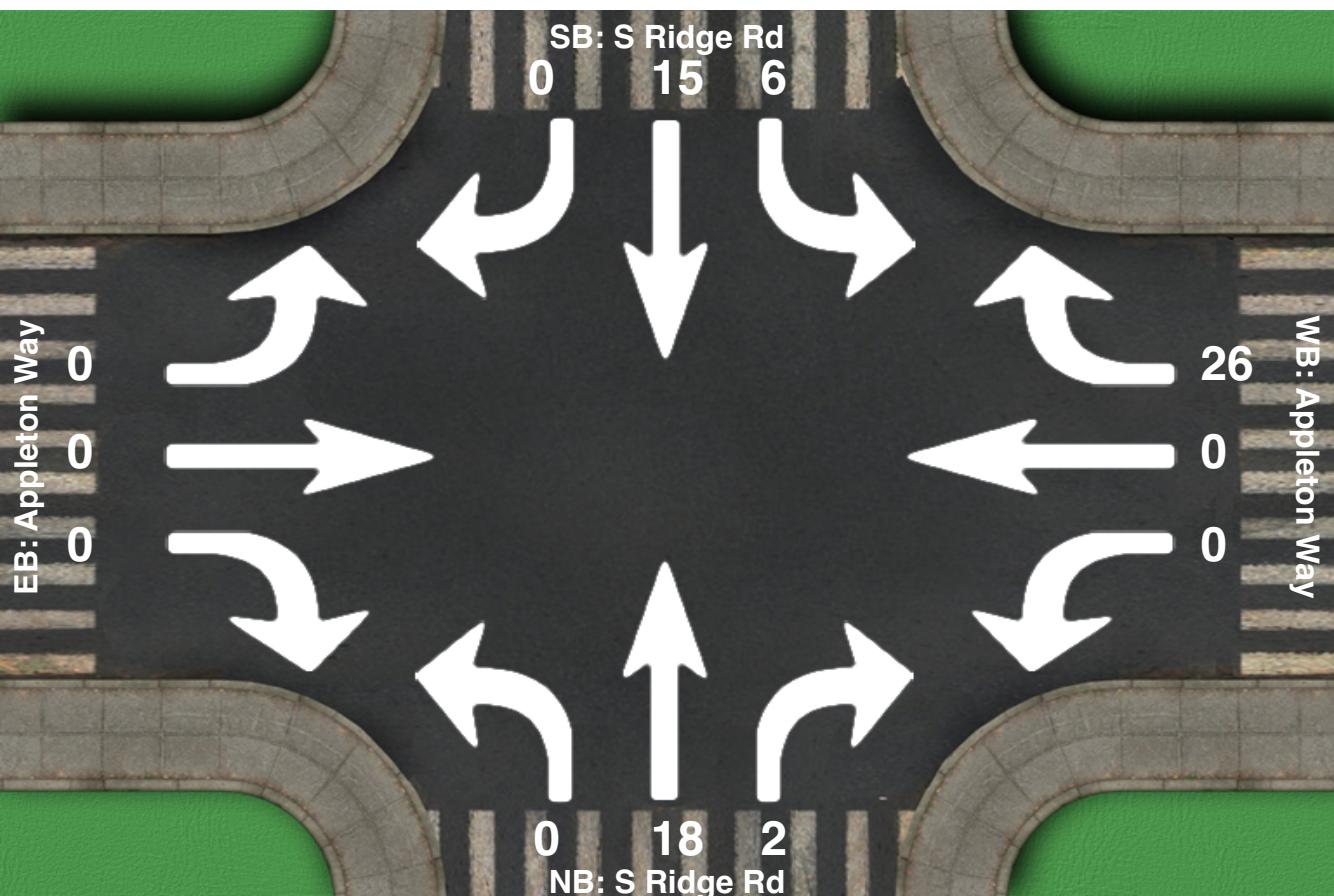
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	6	15	0	0	0	26	0	18	2	0	0	0	67

## **Peak Hour Pedestrians**

# Intersection Peak Hour

**Location:** S Ridge Rd at Appleton Way, Castle Rock, Co  
**GPS Coordinates:** Lat=39.356110, Lon=-104.812002  
**Date:** 2017-01-11  
**Day of week:** Wednesday  
**Weather:**  
**Analyst:** Jmwaldridge



## Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	15	0	0	0	26	0	18	2	0	0	0	67
Factor	0.75	0.75	0.00	0.00	0.00	0.65	0.00	0.75	0.25	0.00	0.00	0.00	0.73
Approach Factor	0.75			0.65			0.62			0.00			

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

## Turn Count Summary

**Location:** S. Ridge Rd at Mikelson Blvd, S. Ridg

**GPS Coordinates:** Lat=39.359136, Lon=-104.812595

Date: 2017-01-17

**Day of week:** Tuesday

## **Weather:**

**Analyst:** Jmwaldridge

## Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:25	10	1	0	0	0	48	0	3	0	0	0	0	62
07:30	27	4	0	1	0	154	0	2	0	0	0	0	188
07:45	45	2	0	0	0	105	0	9	1	0	0	0	162
08:00	43	5	0	3	0	73	0	9	1	0	0	0	134
08:15	22	3	0	1	0	70	0	7	0	0	0	0	103

## Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:25	10	1	0	0	0	48	0	3	0	0	0	0	62
07:30	27	4	0	1	0	154	0	2	0	0	0	0	188
07:45	45	2	0	0	0	105	0	9	1	0	0	0	162
08:00	43	5	0	3	0	73	0	9	1	0	0	0	134
08:15	22	3	0	1	0	70	0	7	0	0	0	0	103

## Pedestrian volumes

# Intersection Peak Hour

07:30 - 08:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	137	14	0	5	0	402	0	27	2	0	0	0	587
Factor	0.76	0.70	0.00	0.42	0.00	0.65	0.00	0.75	0.50	0.00	0.00	0.00	0.78
Approach Factor	0.79			0.66			0.72			0.00			

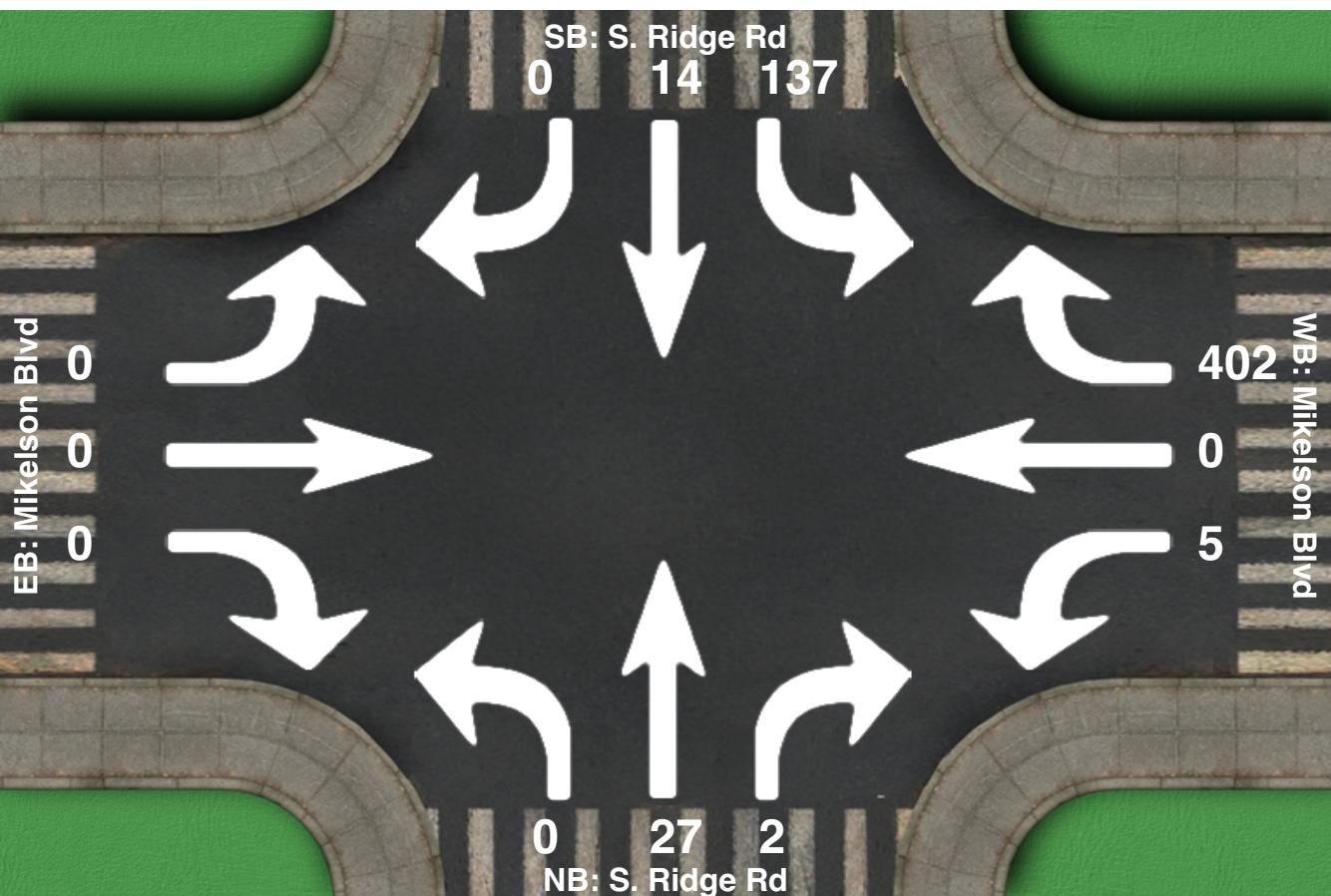
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	137	14	0	5	0	402	0	27	2	0	0	0	587

# Peak Hour Pedestrians

# Intersection Peak Hour

**Location:** S. Ridge Rd at Mikelson Blvd, S. Ridg  
**GPS Coordinates:** Lat=39.359136, Lon=-104.812595  
**Date:** 2017-01-17  
**Day of week:** Tuesday  
**Weather:**  
**Analyst:** Jmwaldridge



# Intersection Peak Hour

07:30 - 08:30

	South Bound			West Bound			North Bound			East Bound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	137	14	0	5	0	402	0	27	2	0	0	0	587
Factor	0.76	0.70	0.00	0.42	0.00	0.65	0.00	0.75	0.50	0.00	0.00	0.00	0.78
Approach Factor	0.79			0.66			0.72			0.00			

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

# Turn Count Summary

**Location:** S. Ridge Rd at Mikelson Blvd, S. Ridg

**GPS Coordinates:** Lat=39.359136, Lon=-104.812595

Date: 2017-01-17

**Day of week:** Tuesday

## **Weather:**

**Analyst:** Jmwaldridge

## Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:48	89	7	0	2	0	45	0	6	3	0	0	0	152
17:00	139	7	0	0	0	74	0	7	2	0	0	0	229
17:15	132	4	0	0	0	62	0	4	1	0	0	0	203
17:30	126	6	0	2	0	70	0	10	3	0	0	0	217

# Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:48	89	7	0	2	0	45	0	6	3	0	0	0	152
17:00	139	7	0	0	0	74	0	7	2	0	0	0	229
17:15	132	4	0	0	0	62	0	4	1	0	0	0	203
17:30	126	6	0	2	0	70	0	10	3	0	0	0	217

## Pedestrian volumes

# Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	486	24	0	4	0	251	0	27	9	0	0	0	801
Factor	0.87	0.86	0.00	0.50	0.00	0.85	0.00	0.68	0.75	0.00	0.00	0.00	0.87
Approach Factor	0.87			0.86			0.69			0.00			

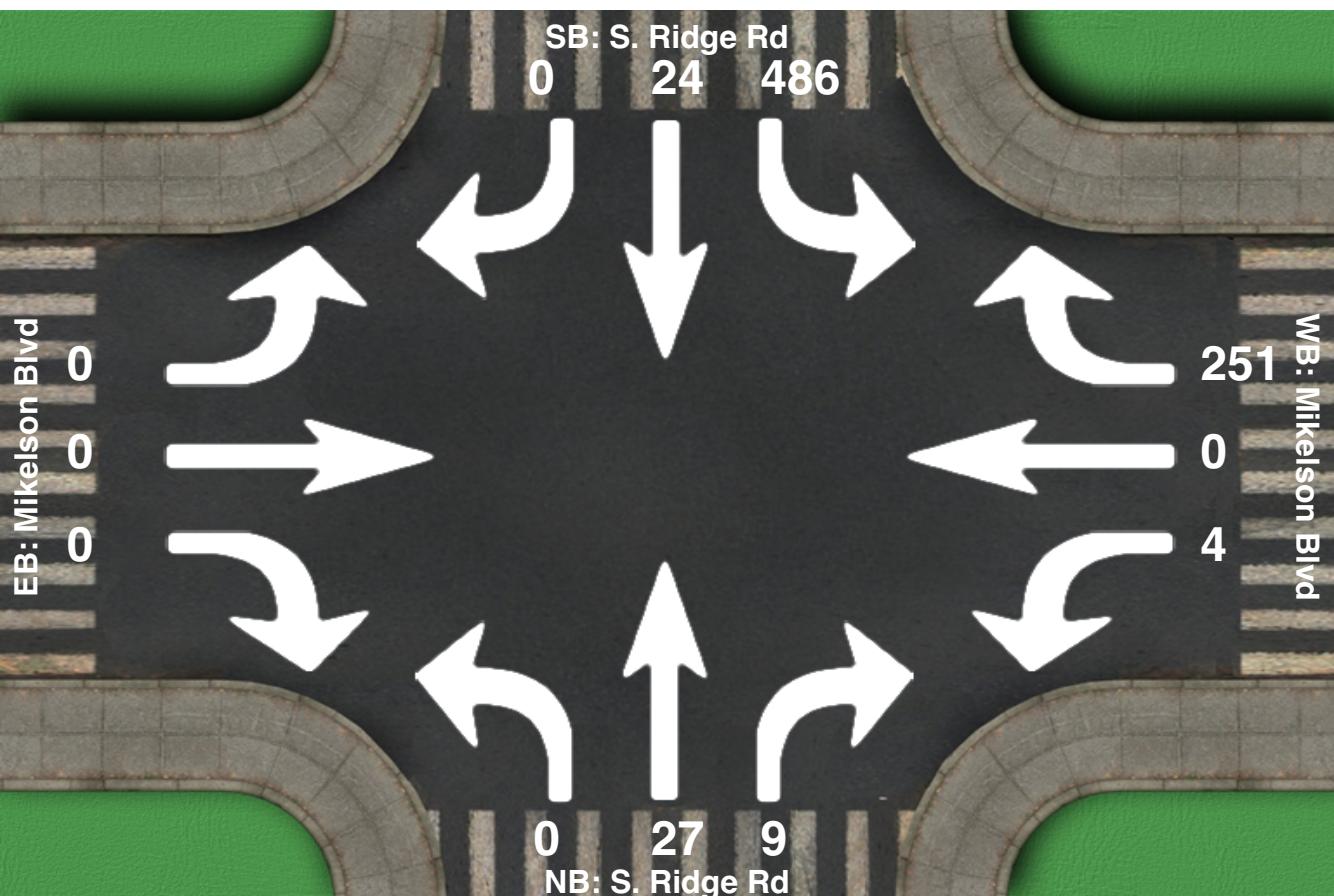
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	486	24	0	4	0	251	0	27	9	0	0	0	801

# Peak Hour Pedestrians

# Intersection Peak Hour

**Location:** S. Ridge Rd at Mikelson Blvd, S. Ridg  
**GPS Coordinates:** Lat=39.359136, Lon=-104.812595  
**Date:** 2017-01-17  
**Day of week:** Tuesday  
**Weather:**  
**Analyst:** Jmwaldridge



# Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	486	24	0	4	0	251	0	27	9	0	0	0	801
Factor	0.87	0.86	0.00	0.50	0.00	0.85	0.00	0.68	0.75	0.00	0.00	0.00	0.87
Approach Factor	0.87			0.86			0.69			0.00			

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

# Turn Count Summary

**Location:** Lantern Trail at Mikelson Blvd, S. Ridg

**GPS Coordinates: Lat=39.561067, Lon=-104.976100**

Date: 2017-01-19

**Day of week:** Thursday

## **Weather:**

**Analyst:** **Jmwaldridge**

# Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:15	7	0	23	2	101	6	13	1	0	3	24	1	181
07:30	2	2	18	1	64	4	14	1	0	1	26	11	144
07:45	3	0	13	1	66	1	8	0	3	8	24	5	132
08:00	0	0	9	2	57	3	12	2	0	9	35	3	132

## Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:15	7	0	23	2	101	6	13	1	0	3	24	1	181
07:30	2	2	18	1	64	4	14	1	0	1	26	11	144
07:45	3	0	13	1	66	1	8	0	3	8	24	5	132
08:00	0	0	9	2	57	3	12	2	0	9	35	3	132

## Pedestrian volumes

# Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	2	63	6	288	14	47	4	3	21	109	20	589
Factor	0.43	0.25	0.68	0.75	0.71	0.58	0.84	0.50	0.25	0.58	0.78	0.45	0.81
Approach Factor	0.64			0.71			0.90			0.80			

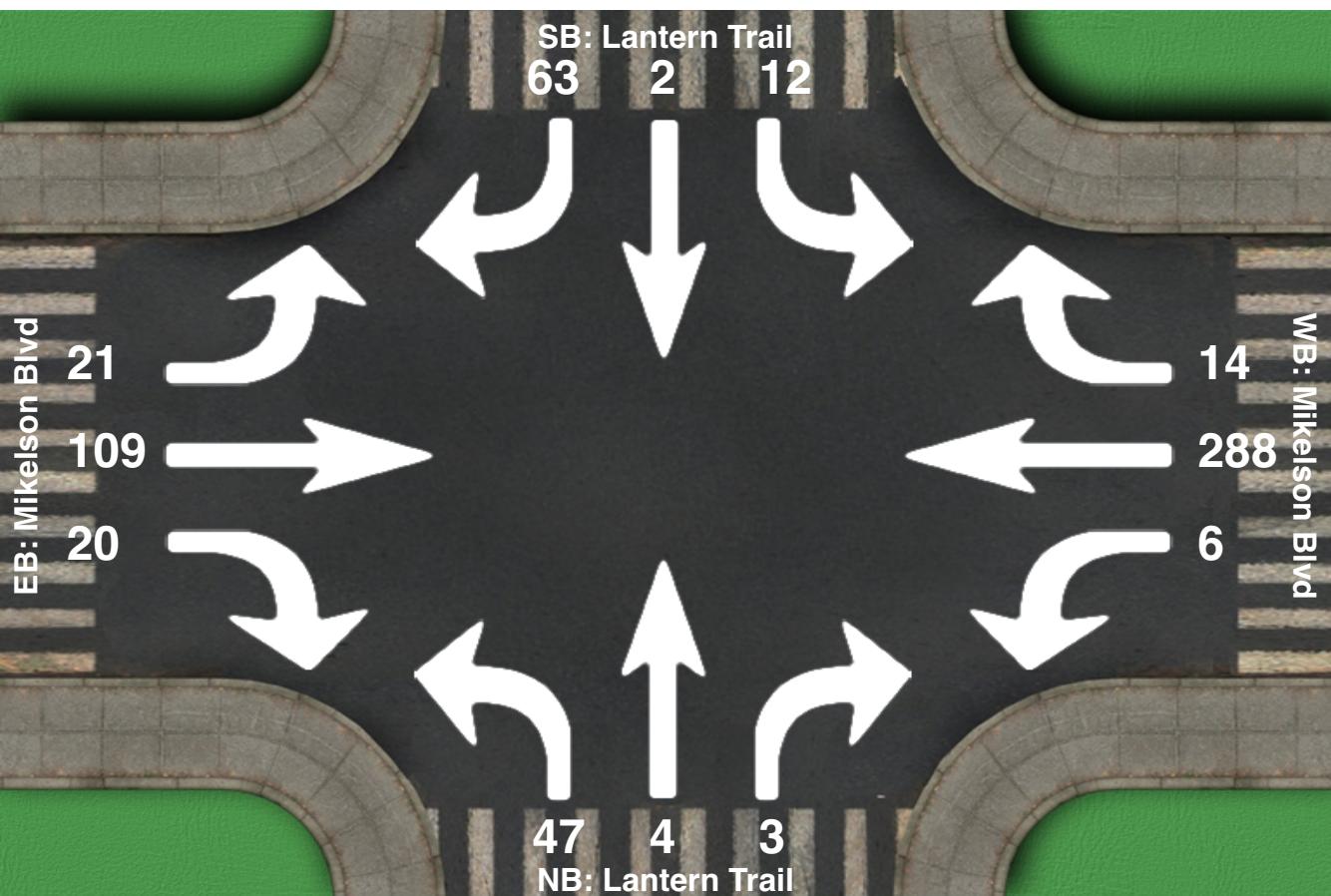
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	12	2	63	6	288	14	47	4	3	21	109	20	589

# Peak Hour Pedestrians

# Intersection Peak Hour

**Location:** Lantern Trail at Mikelson Blvd, S. Ridg  
**GPS Coordinates:** Lat=39.561067, Lon=-104.976100  
**Date:** 2017-01-19  
**Day of week:** Thursday  
**Weather:**  
**Analyst:** Jmwaldridge



# Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	2	63	6	288	14	47	4	3	21	109	20	589
Factor	0.43	0.25	0.68	0.75	0.71	0.58	0.84	0.50	0.25	0.58	0.78	0.45	0.81
Approach Factor	0.64			0.71			0.90			0.80			

**Aldridge Transportation Consultants**  
1082 Chimney Rock Rd  
**Highlands Ranch , Colorado , 80126**  
**303.703.9112**

# Turn Count Summary

**Location:** Lantern Trail at Mikelson Blvd, S. Ridge

**GPS Coordinates: Lat=39.561067, Lon=-104.976100**

Date: 2017-01-19

**Day of week:** Thursday

## **Weather:**

**Analyst:** Jmwaldridge

## Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:51	1	1	3	1	28	1	3	2	0	8	30	5	83
17:00	2	1	10	1	41	4	9	6	2	16	80	14	186
17:15	2	0	9	1	28	1	14	0	2	20	70	13	160
17:30	1	1	8	2	33	1	7	2	0	17	66	13	151

# Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:51	1	1	3	1	28	1	3	2	0	8	30	5	83
17:00	2	1	10	1	41	4	9	6	2	16	80	14	186
17:15	2	0	9	1	28	1	14	0	2	20	70	13	160
17:30	1	1	8	2	33	1	7	2	0	17	66	13	151

# Pedestrian volumes

# Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	3	30	5	130	7	33	10	4	61	246	45	580
Factor	0.75	0.75	0.75	0.62	0.79	0.44	0.59	0.42	0.50	0.76	0.77	0.80	0.78
Approach Factor	0.75			0.77			0.69			0.80			

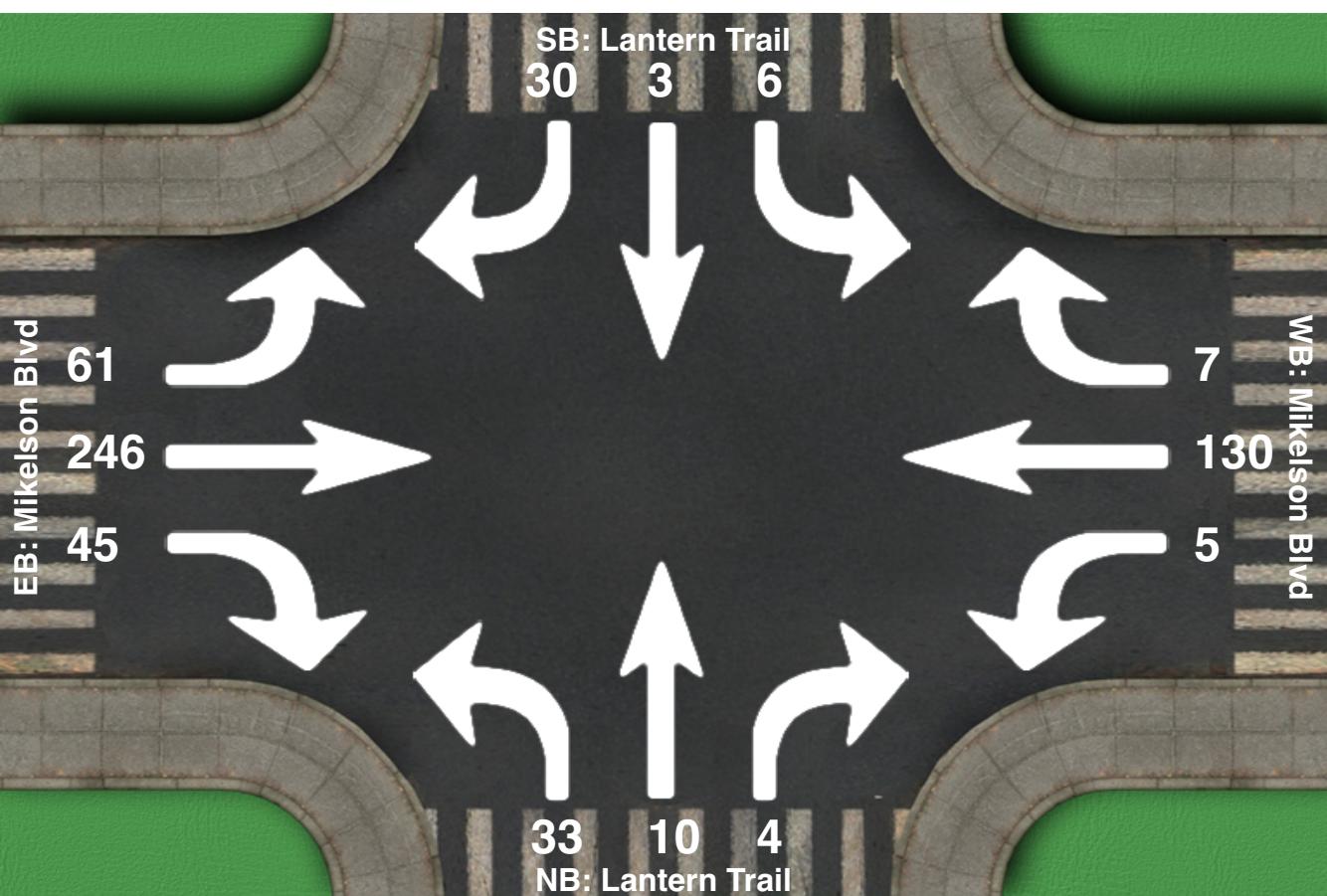
## **Peak Hour Vehicle Summary**

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	6	3	30	5	130	7	33	10	4	61	246	45	580

# Peak Hour Pedestrians

## Intersection Peak Hour

**Location:** Lantern Trail at Mikelson Blvd, S. Ridgway, CO  
**GPS Coordinates:** Lat=39.561067, Lon=-104.976100  
**Date:** 2017-01-19  
**Day of week:** Thursday  
**Weather:** Partly Cloudy  
**Analyst:** Jmwaldridge



## Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	3	30	5	130	7	33	10	4	61	246	45	580
Factor	0.75	0.75	0.75	0.62	0.79	0.44	0.59	0.42	0.50	0.76	0.77	0.80	0.78
Approach Factor	0.75			0.77			0.69			0.80			