Hillside at Lorson Ranch
Traffic Impact Study

Prepared for:

City of Colorado Springs, CO

Prepared by:

Matrix
Excellence by Design

2435 Research Parkway, Suite 300
Colorado Springs, CO 80920

Contact: Scott Barnhart, PE, PTOE

On Behalf of:

The Landhuis Company
212 N. Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

June 30, 2022

Table of Contents

List of Figures

List of Tables

Introduction

Hillside at Lorson Ranch is a 128.33-acre development located in the southern El Paso County. The project consists of 489 single family detached homes.

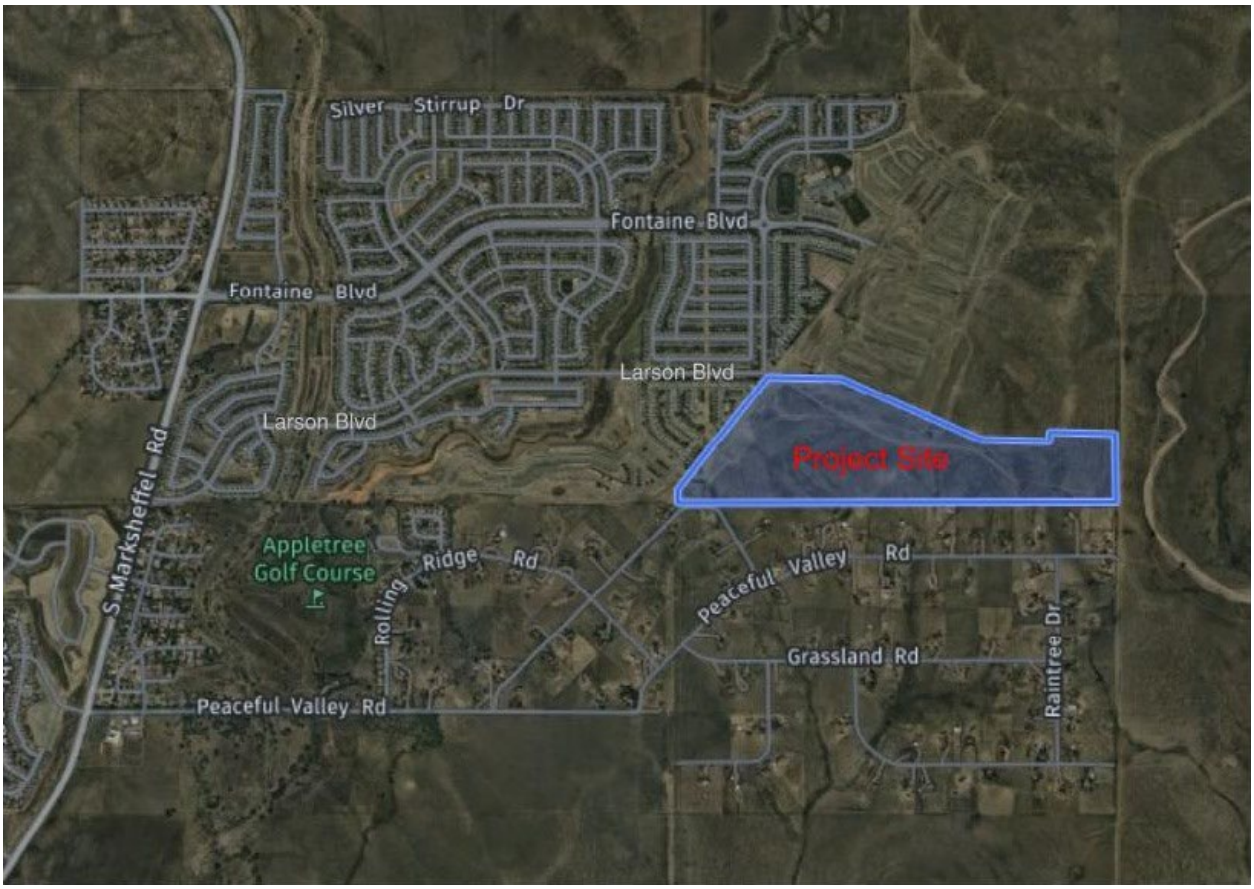
The project lies east of Marksheffel Road and south of Lorson Boulevard.

The purpose of this study is to assess the effects this proposed development will have on the surrounding transportation system.

The report is organized as follows:

- ***Introduction –*** Describes the purpose and intent of this study.
- ***Area Conditions –*** Describes the study area land uses as well as the existing and future roadway network.
- ***Proposed Development –*** Describes the proposed development and the location.
- ***Projected Traffic –*** Identifies the expected number of daily and peak hour trips that will be generated by the Hillside at Lorson Ranch development. The expected external trip distribution is also shown.
- ***Traffic Analysis –*** Will analyze the existing conditions in the study area as well as buildout year and horizon year (2040) conditions with and without the project.
- ***Findings and Conclusions –*** Identifies any deficiencies in the study area roadway network with or without the project and mitigation measures that will alleviate any identified deficiencies.
- ***Recommendations –*** Provides a summary of the study findings.

Figure 1. Vicinity Map

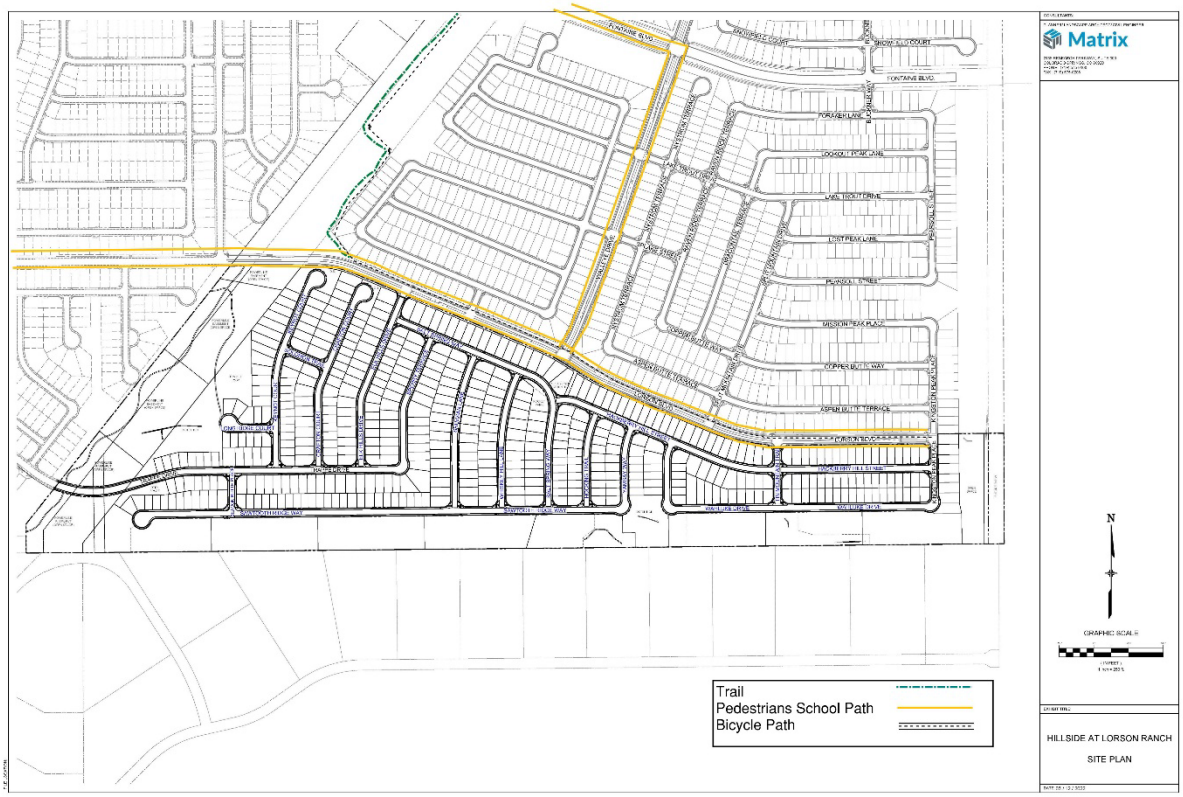


Proposed Development

Hillside at Lorson Ranch will consist of 489 single family detached homes.

Figure 2 illustrates the Hillside at Lorson Ranch site plan. The Hillside development is south of Lorson Boulevard.

Figure 2. Hillside at Lorson Ranch Site Plan



Area Conditions

This section describes the existing conditions and the planned level of improvements adjacent to the Hillside at Lorson Ranch development.

Study Area Land Use

Hillside at Lorson Ranch will be constructed on vacant land and is bound on the west by a powerline easement, on the south by adjacent development, on the east by future Meridian Road and the north by Lorson Boulevard. The development is one of many phases of the overall Lorson Ranch residential development which has begun construction to the west and is partially occupied. Trail corridors are planned along the powerline easement, the East Fork of Jimmy Camp Creek, and along Jimmy Camp Creek This area of El Paso County is growing rapidly and includes other developments such as Trails at Aspen Ridge, Bradley Heights, Banning Lewis Ranch, Corvallis and The Glen at Widefield. The Bull Hill development is proposed to be constructed to the northeast of Lorson Ranch.

Site Accessibility

The existing roadway system consists of the following transportation facilities:

Marksheffel Road is the primary north-south transportation facility and is a three-lane facility that is classified as a 4-lane Expressway in the El Paso County 2040 Major Transportation Corridor Plan. The daily traffic capacity is 48,000 ADT. Marksheffel Road provides paved shoulder to accommodate cyclists. El Paso County's 2060 Corridor Preservation Plan calls for Marksheffel Road to be preserved as a 6-lane expressway.

Fontaine Boulevard is an east-west facility classified as a 4-lane Principal Arterial in the El Paso County 2040 Major Transportation Corridor Plan. The daily traffic capacity is 40,000 ADT. Fontaine Boulevard provides paved shoulder to accommodate cyclists. This road is classified as a 4-lane principal arterial in 2060 Corridor Preservation Plan.

West of Stingray Lane/Old Glory Drive

Lorson Boulevard is another east-west transportation facility along the northern boundary of Hillside at Lorson Ranch. It is classified as an Urban Residential Collector road based on the Lorson Ranch master plan. However, the cross-section is a hybrid between the residential collector and a commercial road and provides a center turn lane. This road has been constructed with wider travel lanes (and a striped left-turn median) to allow for shared lane use with experienced cyclists. The adjacent sidewalk will accommodate children and families as well as cyclists less experienced at cycling in traffic. In addition, a bicycle lane along the north side of this road that eventually follows the trail at the northwest corner of the development is purposed to accommodate the cyclists. The addition of the center turn lane allows Lorson Boulevard to accommodate a capacity of 20,000 ADT. Lorson Boulevard is shown on the 2060 Corridor Preservation Plan as a collector road.

The existing conditions analysis is confined to the intersections of Marksheffel Road/Fontaine Boulevard and Marksheffel Road/Lorson Boulevard. A recently completed study done by LSC Consultants for *The Ridge at Lorson Ranch Filings 1-3* shows this intersection meets 4-hour and 8-hour volume warrants as well as crash warrants for the installation of a traffic signal now. The traffic impact study for *Creekside South at Lorson Ranch* indicates that the $300,000 cost estimate for the new traffic signal has already been collected from other Lorson Ranch filings. We are proposing to construct the traffic signal with the last plat in the Hillside at Lorson Ranch development with the fair share escrow funds that have been already collected from other developments. Hence, in buildout and horizon conditions this intersection is considered as a signalized intersection. Additionally, this development has no responsibility to contribute towards the cost of this traffic signal. No new traffic counts were conducted for this study. This study builds on the traffic volumes presented in other adjacent developments. The studies of surrounding developments are as follows:

- Corvallis Traffic Impact Study; June 14, 2021
- Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis; October 25, 2018
- Creekside South at Lorson Ranch Transportation Memorandum; Revised May 5, 2020
- Lorson Ranch Sketch Plan Amendment 2 Traffic Impact and Access Analysis; December 17, 2018
- Creekside at Lorson Ranch Traffic Impact Study; November 10, 2021
- Ridges at Lorson Ranch Traffic Impact Analysis; October 8, 2021

It needs to be constructed with the next plat recorded in Lorson Ranch.

State the reasoning - this does not make sense if the cost will be above the escrow collected so far.

Traffic volumes along Fontaine Boulevard and within the proposed Ridges development were taken from the Ridges at Lorson Ranch Traffic Impact Analysis and volumes along Lorson Boulevard were taken from the Creekside at Lorson Ranch Traffic Impact Study.

Sidewalks are provided along both sides of all roadways within the Lorson Ranch development including the Hillside development. Additionally, a trail corridor is provided along the electrical easement to the west of the development that provides connection to Grand Mountain School and Fontaine Boulevard for bicycles and pedestrians. The AM and PM peak hour volumes at these intersections are shown in Figures 3 and 4.

Figure 3. Existing Conditions Traffic Volumes (AM Peak Hour)

Marksheffel Road/Fontaine Boulevard Marksheffel Road/Lorson Boulevard

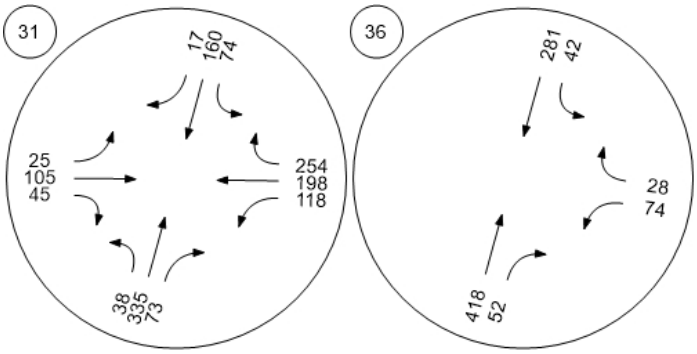
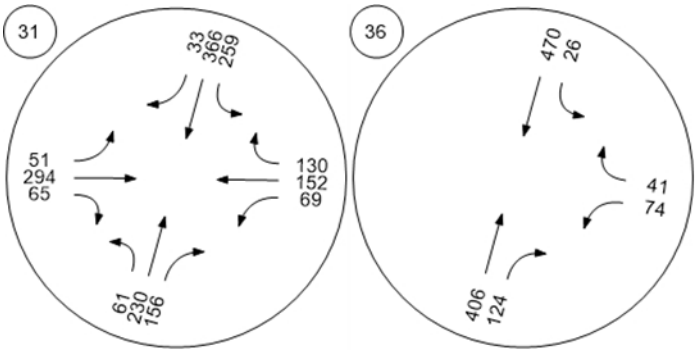


Figure 4. Existing Conditions Traffic Volumes (PM Peak Hour)

Marksheffel Road/Fontaine Boulevard Marksheffel Road/Lorson Boulevard



Intersection LOS analysis was performed for the two study area intersections and the results are shown in Tables 1 and 2.

Figure 5. Existing Conditions Daily Traffic Volumes

Table 1. Existing Conditions Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Right	0.377	14.9	B
36	Marksheffel Rd/Lorson Bl	Two-way stop	HCM 6th Edition	WB Left	0.212	18.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 2. Existing Conditions Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Left	0.342	12.9	B
36	Marksheffel Rd/Lorson Bl	Two-way stop	HCM 6th Edition	WB Left	0.255	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Tables 1 and 2 indicate both study area intersections currently operate at acceptable level-of-service (LOS) and that no mitigation is required. Acceptable operations per the El Paso County Engineering Criteria Manual is defined as any intersection that operates at LOS D or better. The daily traffic volumes along Marksheffel Road, Fontaine Boulevard and Lorson Boulevard are within the capacities for each road as defined by the El Paso County Engineering Criteria Manual.

There are no fixed route transit services in the area and there are also no transportation system management or traffic demand management programs in the area.

Crash History

CDOT historical crash data for Marksheffel Road, Fontaine Boulevard and Lorson Boulevard from 2017 to 2020 were used in this step. During the analysis period a total of 19 crashes occurred within the analyzed segments. 53% (10) of crashes were reported as injury, 47% (9) were reported as property damage only (PDO), while no fatal accidents was reported. The majority of the crashes that contained Violation Code in their report (77%) were caused by careless driving. Equation below* was used to calculate the road segments crash rate

$$R = \frac{100{,}000{,}000 * \mathrm{C}}{365 * \mathrm{N} * \mathrm{V} * \mathrm{L}}$$

Where:
R = Crash rate for the road segment expressed as crashes per 100 million vehicle-miles of travel (VMT).
C = Total number of crashes in the study period.
N = Number of years of data.
V = Number of vehicles per day (both directions)
L = Length of the roadway segment in miles

*Source: FHWA

A summary of historical crashes and crash rates for analyzed segments are shown in Table 3 and 4.

Table 3. Crash History

Location	At	Date	Time	Severity	Violation Code
MARKSHEFFEL RD	FONTAINE BLVD	6/28/2017	0815	INJ	VIOLATION OF RED SIGNAL LIGHT
MARKSHEFFEL RD	FONTAINE BLV	3/19/2018	0825	INJ	
MARKSHEFFEL RD	FONTAINE BLV	6/13/2018	1543	INJ	CARELESS DRIVING CAUSE INJURY
MARKSHEFFEL RD	FONTAINE BLVD	11/19/2018	0550	PDO	CARELESS DRIVING
MARKSHEFFEL RD	FONTAINE BLVD	10/3/2018	2103	INJ	
MARKSHEFFEL RD	FONTAINE BLVD	12/21/2018	1310	INJ	CARELESS DRIVING CAUSE INJURY
MARKSHEFFEL RD	FONTAINE BLVD	1/5/2019	1340	INJ	DRIVE UNDER INFLUENCE ALCOHOL
MARKSHEFFEL RD	FONTAINE BLVD	5/23/2020	1424	INJ	CARELESS DRIVING CAUSE INJURY
FONTAINE BLVD	MARKSHEFFEL	11/22/2017	0420	PDO	
FONTAINE BLVD	MARKSHEFFEL RD	4/30/2019	1035	INJ	CARELESS DRIVING CAUSE INJURY
FONTAINE BLVD	MARKSHEFFEL RD	9/26/2019	1105	INJ	CARELESS DRIVING CAUSE INJURY
FONTAINE BLVD	MARKSHEFFEL RD E	11/7/2019	0700	PDO	CARELESS DRIVING
FONTAINE BLVD	WEEPING WILLOW LN	7/13/2017	1150	PDO	CARELESS DRIVING
FONTAINE BLVD	WEEPING WILLOW DR	6/15/2018	1850	PDO	CARELESS DRIVING
FONTAINE B	MARKSHEFFEL RD	2/21/2020	0705	PDO	CARELESS DRIVING
FONTAINE BLVD	MARKSHEFFEL RD	8/23/2020	0850	PDO	
FONTAINE BLVD	MARKSHEFFEL RD	10/11/2020	1116	INJ	FOLLOWING TOO CLOSE
FONTAINE BLVD	MARKSHEFFEL RD	12/5/2020	2100	PDO	CARELESS DRIVING
LORSON BLVD	KEARSARGE DR	8/26/2019	0735	PDO	

Table 4. Crash Rate in the vicinity of Hillside at Lorson Ranch

Roadway Segment	Length of the Segment	Crash Rate (Crashes/Year)			Crash Rate (Crashes/100 Million vehicle-miles Travel (VMT)
		PDO	Injury	Fatal	
Marksheffel Boulevard	0.25 Mile North and South of Fontaine Boulevard	0.25	1.75	0	108.72
Fontaine Boulevard	0.25 Mile East and West of Marksheffel Boulevard	1.75	0.75	0	136.17
Lorson Bulevard	0.25 Mile East of Marksheffel Boulevard	0.25	0.00	0	51.88

Projected Development Traffic

This section documents how much traffic the Hillside at Lorson Ranch development is expected to generate and how the external site trips will be distributed on the adjacent roadway network.

Trip Generation

The vehicle trips associated with Hillside at Lorson Ranch were calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition.* This methodology consists of choosing an independent variable for the land use for a particular time of day. The independent variable correlates to the variation in trip ends and is related to the land use. The value of the independent variable is either multiplied by a weighted average or used in a regression equation to calculate the trips generated by the land use. The *ITE Trip Generation Manual* provides guidance on when to use the weighted average versus the regression equation. In most cases, the regression equations are recommended when there are adequate study data points.

Table 5 shows the trips that are expected to be generated by Hillside at Lorson Ranch at build out.

Table 5. Hillside at Lorson Ranch Trip Generation

ITE Code	Land Use	Size	Units	Weekday			AM Peak Hour			PM Peak Hour		
				Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
210	Single Family Detached Housing	489	DU	4478	2239	2239	352	88	264	467	294	173

No trip reduction is accounted for because there is only one land-use.

Trip Distribution

Figure 6 illustrates the expected external distribution of travel for the site-generated trips. This distribution was determined by reviewing the total trips on the roadway network and by looking at other traffic impact studies in the area.

Figure 6. Trip Distribution

Roadways adjacent to the new development are classified based on the 2040 Major Transportation Corridor Plan and are shown in figure 7.

Figure 7. Roadway Classification

The project trips for both the AM and PM peak hours are shown in Figures 8 and 9 and daily project trips are shown in Figure 10.

Figure 8. Hillside at Lorson Ranch Project Trips (AM Peak Hour)

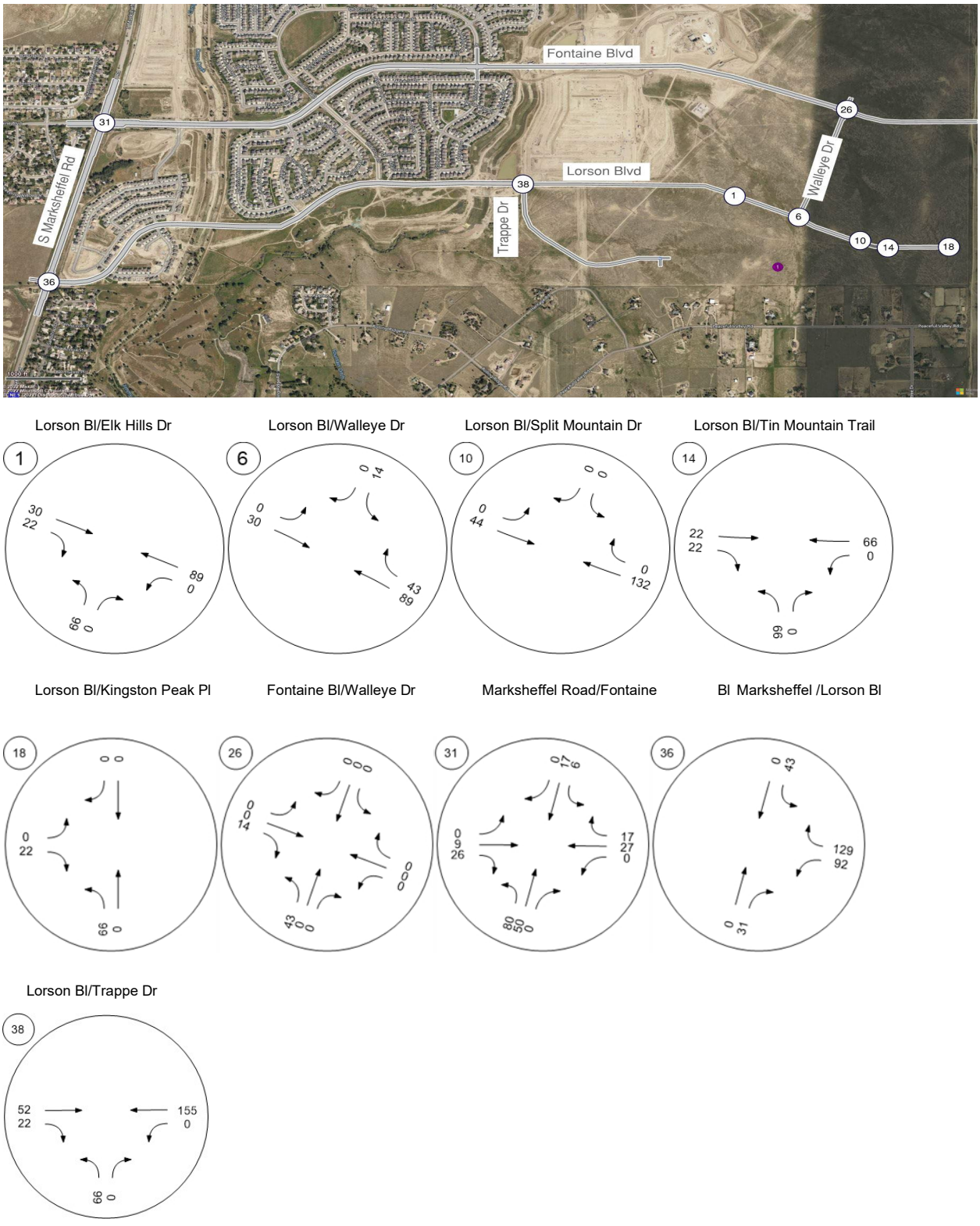


Figure 9. Hillside at Lorson Ranch Project Trips (PM Peak)

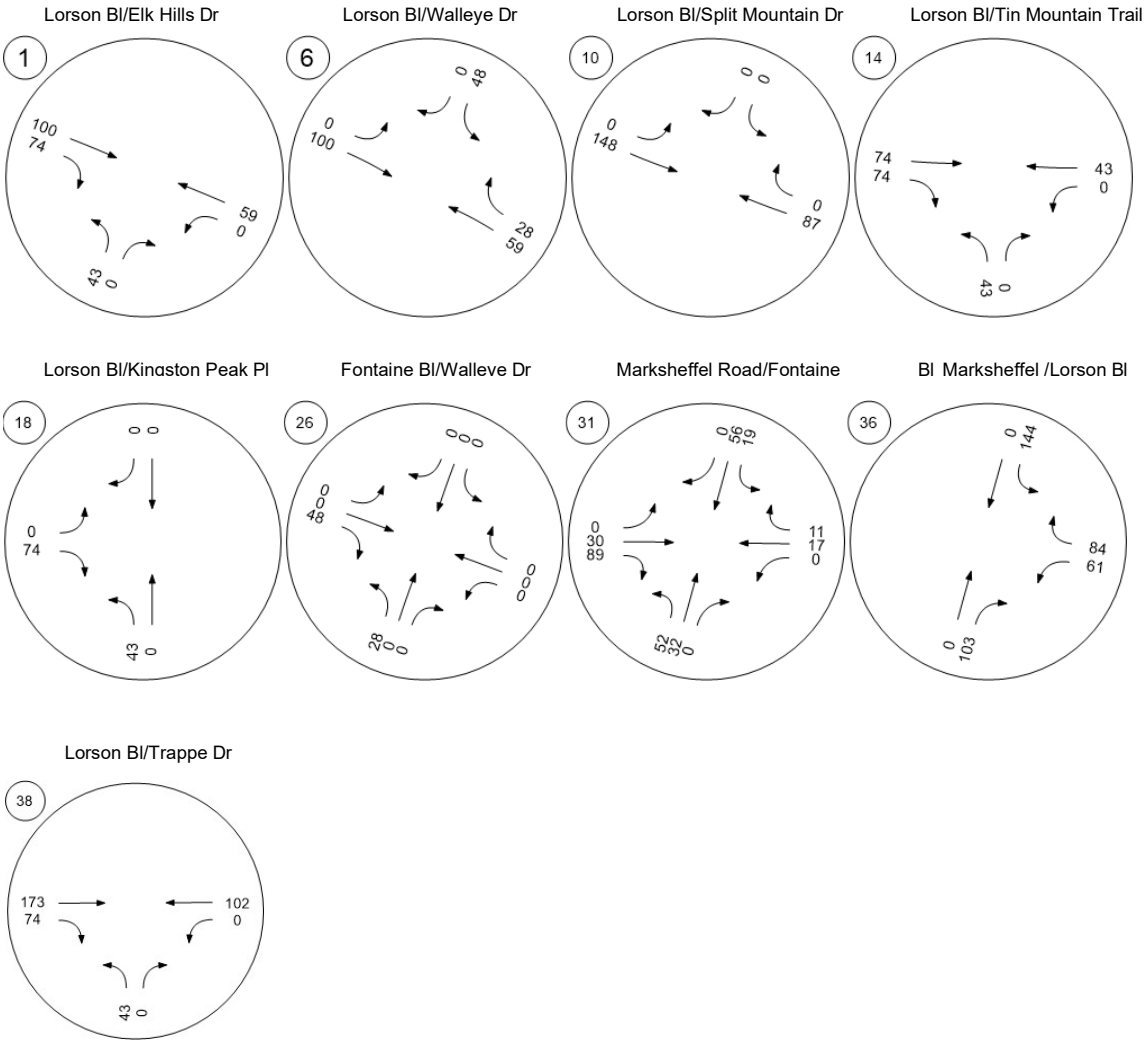
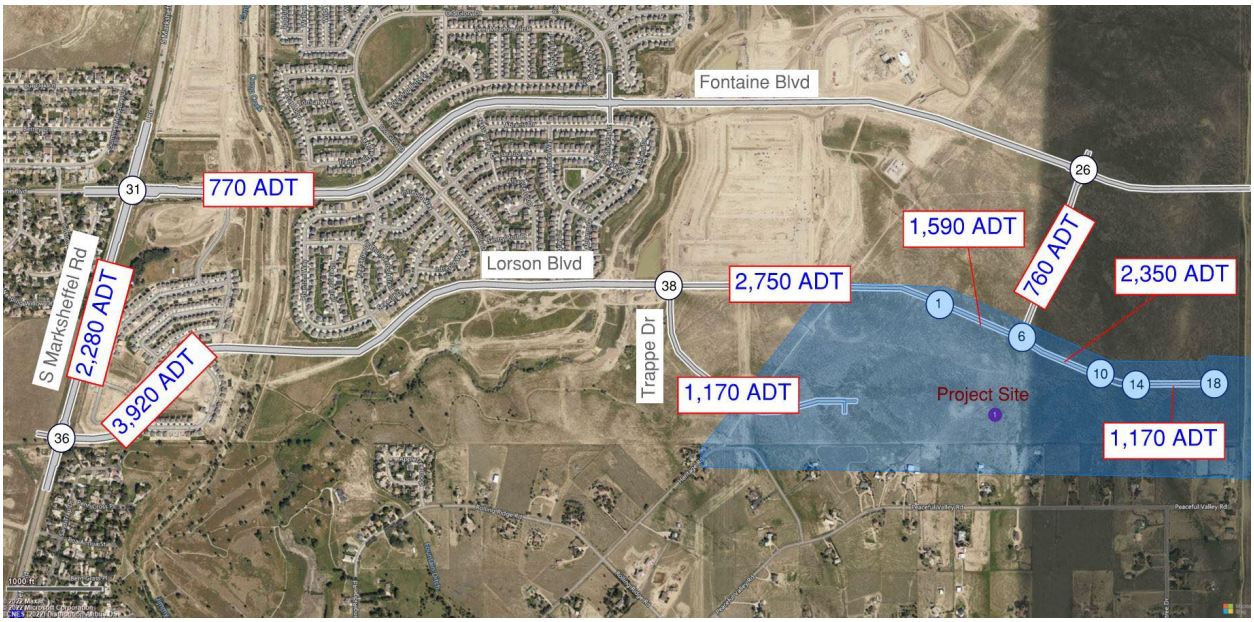


Figure 10. Hillside at Lorson Ranch Daily Site Trips



Spacing and Sight Distance

Proposed access points from the Hillside development on Lorson Boulevard were analyzed based on the County's Engineering Criteria Manual (ECM). All intersections satisfied the criteria for minimum spacing on an urban residential collector. Table 2-7 in ECM states a 330 feet intersection spacing for residential collectors intersecting local roadways.

In addition, all intersections provide adequate sight distances. ECM requires a minimum length of 335 feet sight distance for two-lane roads with stop controlled (Table 2-21). Intersection sight-triangles are shown on the PUDSP site plan on sheets SP-01 through SP-08.

Traffic Analysis

Traffic conditions both with and without the project have been analyzed for buildout year and horizon year (2040) conditions.

Buildout Background Conditions

The buildout year traffic volumes without the Hillside at Lorson Ranch project are shown in Figures 11 and 12 and daily traffic volumes are shown in Figure 13. It is assumed that the Corvallis development on the west side of Marksheffel Road will not be built out by the time that Hillside at Lorson Ranch is built, so traffic from the Corvallis development is not included in the Buildout scenario. Corvallis traffic is included in the Horizon year analysis. As shown in Figure 2 school pedestrians' routes to Grand Mountain school will be provided through Lorson Boulevard, Walleye Drive and Fontaine Boulevard. These roads provide sidewalks on both directions.

Figure 11. Build Out Background Traffic Volumes (AM Peak Hour)

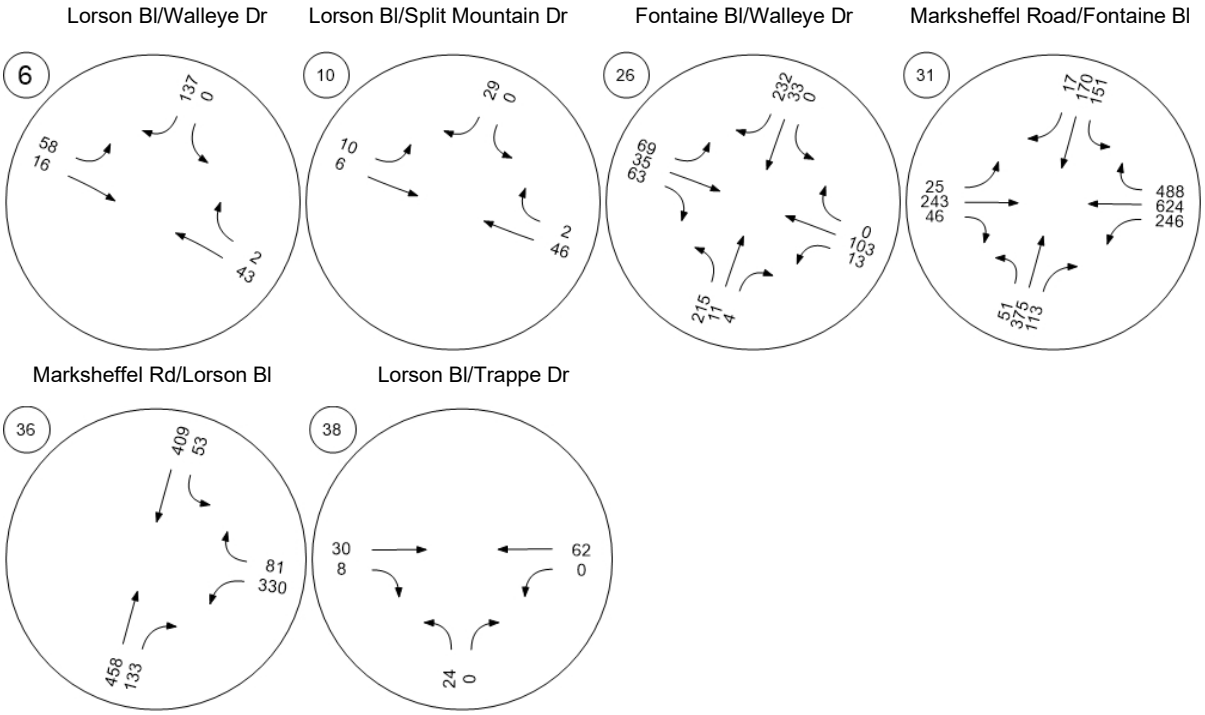
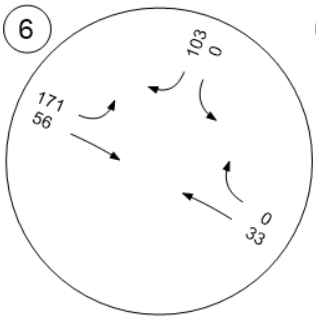
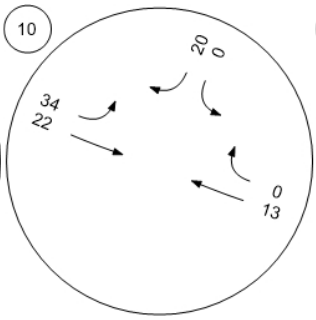


Figure 12. Build Out Background Traffic Volumes (PM Peak Hour)

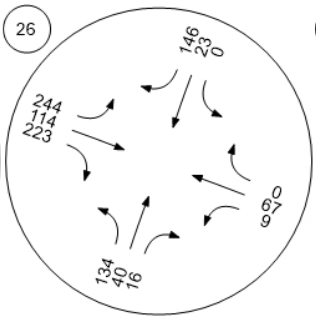
Lorson Bl/Walleye Dr



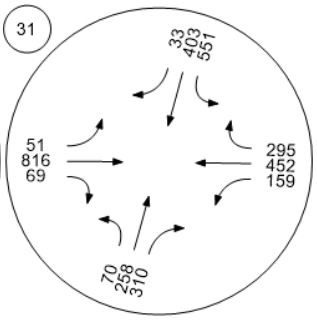
Lorson Bl/Split Mountain Dr



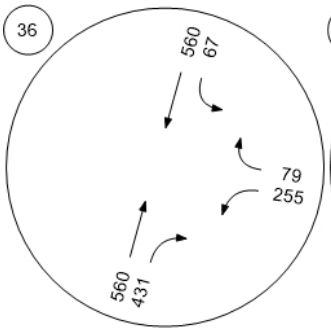
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

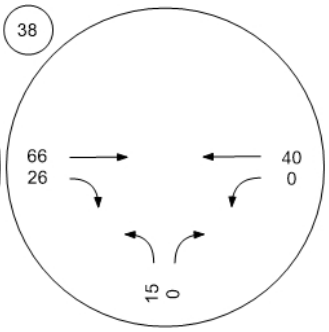
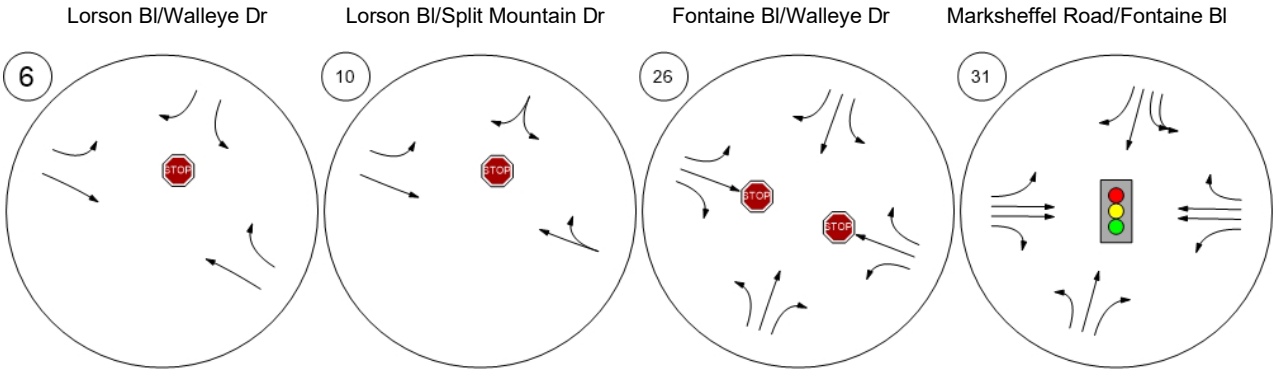


Figure 13. Build Out Background Daily Traffic Volumes

We allowed our traffic analysis software to optimize the cycle length at each signalized intersection. We assumed protected/permitted left-turn phasing at single left-turn lanes. Any double left-turn were assumed to be fully protected. In addition, we allowed the software to perform traffic signal warrant analysis based on FHWA MUTCD criteria. Our software uses AM and PM peak hour volumes to project four-hour and eight-hour volumes based on a standardized distribution of traffic throughout the day to simulate whether traffic signal warrants are met. For more information see Appendix. A Existing Conditions Analysis- Intersection Level of Service Report, Appendix. C Buildout Analysis- Intersection Level of Service Report, and Appendix.D Horizon Analysis- Intersection Level of Service Report

The operations of the study area intersections in the build out background (no project) scenario are shown in Tables 6 and 7. The assumed intersection configurations are shown in Figure 14. Southbound double left-turn lanes on Marksheffel Road/Fontaine Boulevard require a 600 feet deceleration lane with a 222 feet transition taper length.

Figure 14. Build Out Background Intersection Configurations



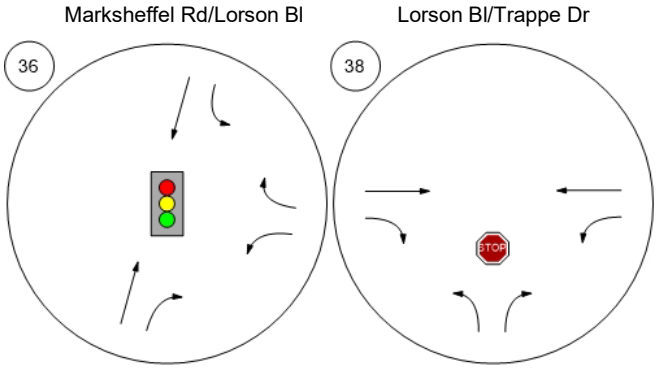


Table 6. Build Out Background Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Right	0.134	9.0	A
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.028	8.6	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	WB Thru	0.342	23.1	C
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	SB Left	0.551	29.0	C
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	WB Left	0.511	19.2	B
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.026	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 7. Build Out Background Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Right	0.099	8.8	A
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.019	8.4	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	EB Left	0.509	20.0	C
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Left	0.684	38.9	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	WB Left	0.492	31.3	C
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.017	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

All study area intersections are projected to operate at an acceptable LOS at buildout without the project traffic as shown in Tables 6 and 7. Additionally, all the roadways will carry a daily volume of traffic that is under their capacity per the El Paso County Engineering Criteria Manual

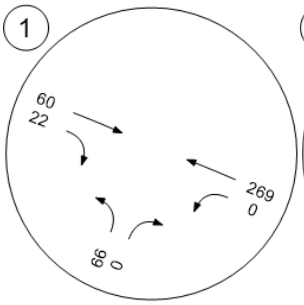
Build Out Total Conditions

Build Out traffic volumes with the project traffic added are shown in Figures 15 and 16 for AM Peak Hour and PM Peak Hour respectively and daily traffic volumes with the project are shown in Figure 17.

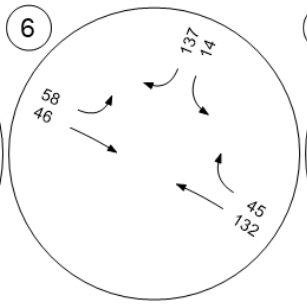
Assumed intersection configurations for the additional project intersections are shown in Figure 18.

Figure 15. Build Out Total Traffic Volumes (AM Peak Hour)

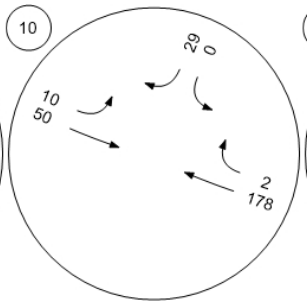
Lorson Bl/Elk Hills Dr.



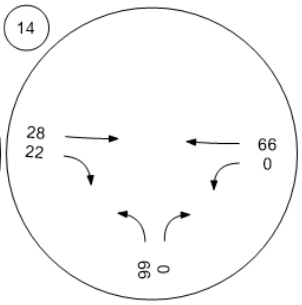
Lorson Bl/Walleye Dr



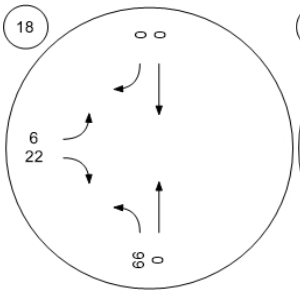
Lorson Bl/Split Mountain Dr



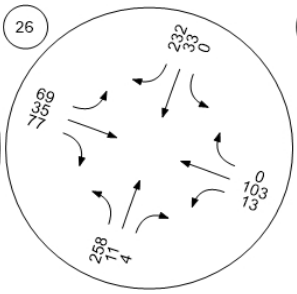
Lorson Bl/Tin Mountain Trail



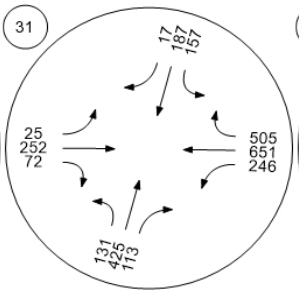
Lorson Bl/Kingston Peak Pl



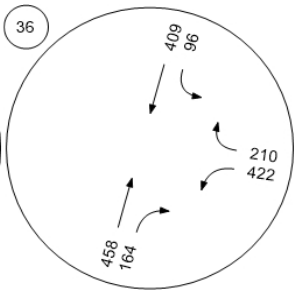
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

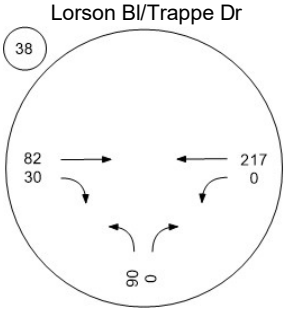


Figure 16. Build Out Total Traffic Volumes (PM Peak Hour)

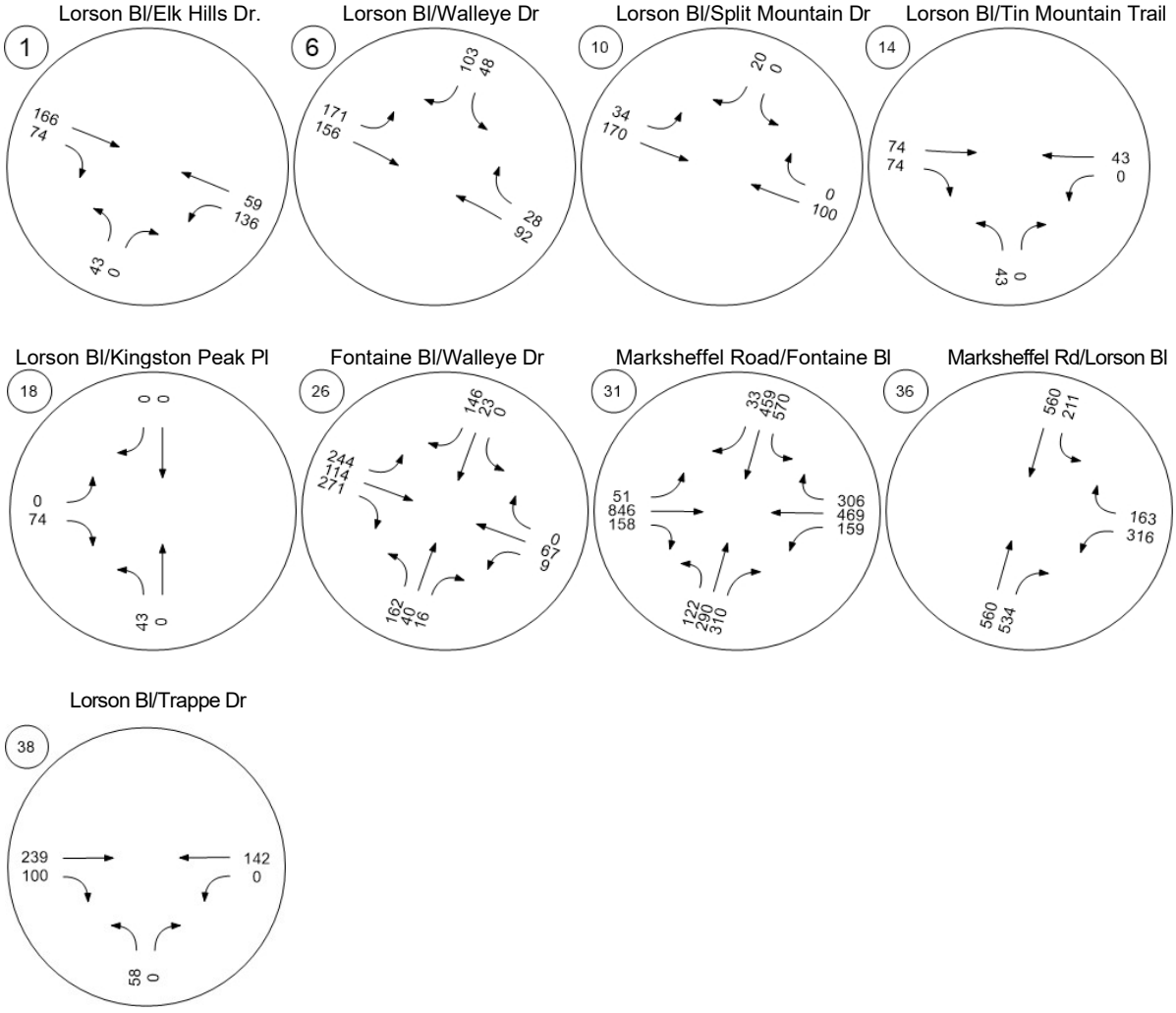


Figure 17. Build Out Total Daily Traffic Volumes

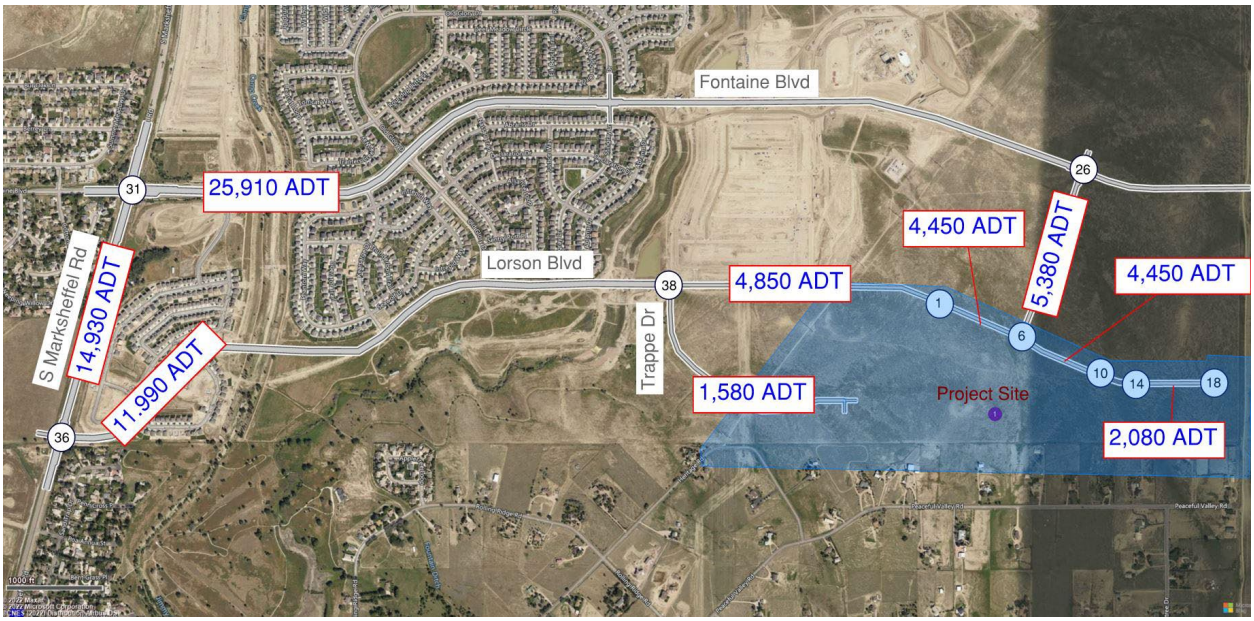
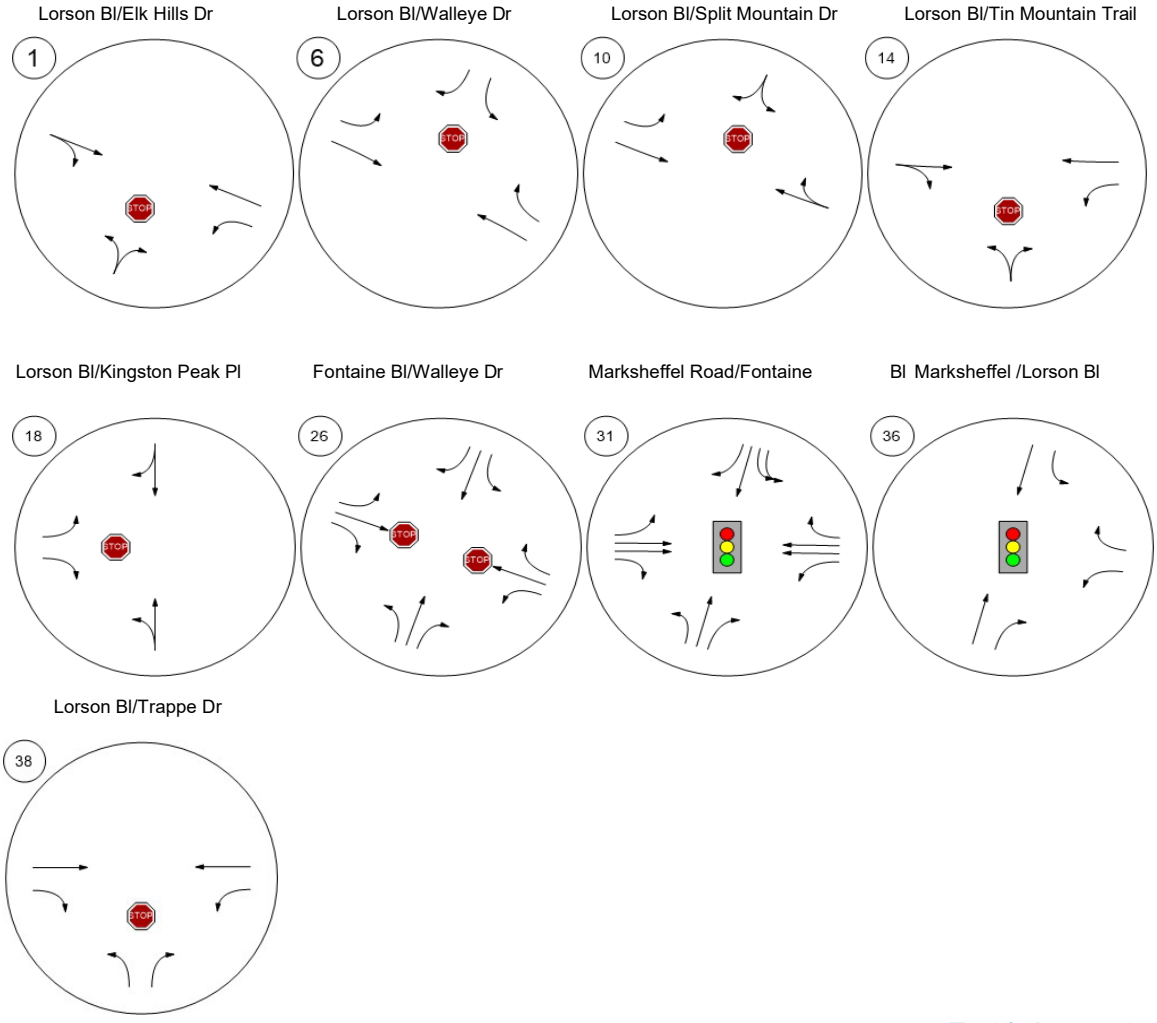


Figure 18. Build Out Total Project Specific Intersection Configurations



Analysis of the intersections and roadways for build out conditions with the volumes and configurations shown above results in the operations shown in Tables 8 and 9.

Table 8. Build Out Total Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lorson Bl/Elk Hills Dr.	Two-way stop	HCM 6th Edition	NB Left	0.101	11.1	B
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.022	10.7	B
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.034	9.3	A
14	Lorson Bl/Tin Mountain Trail	Two-way stop	HCM 6th Edition	NB Left	0.073	9.3	A
18	Lorson Bl/Kingston Peak Pl	Two-way stop	HCM 6th Edition	EB Left	0.007	9.4	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	WB Thru	0.400	28.0	D
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Left	0.656	28.3	C
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	WB Left	0.595	23.6	C
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.130	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 9. Build Out Total Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lorson Bl/Elk Hills Dr.	Two-way stop	HCM 6th Edition	NB Left	0.095	13.7	B
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.116	14.8	B
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.021	8.8	A
14	Lorson Bl/Tin Mountain Trail	Two-way stop	HCM 6th Edition	NB Left	0.049	9.3	A
18	Lorson Bl/Kingston Peak Pl	Two-way stop	HCM 6th Edition	EB Right	0.068	8.6	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	EB Left	0.571	24.0	C
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	NB Left	0.719	46.4	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	SB Left	0.652	39.8	D
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.093	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

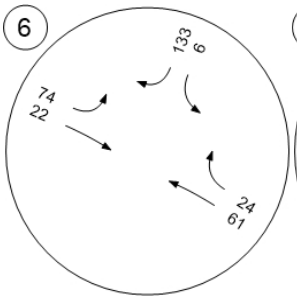
Tables 8 and 9 indicate that all study area intersections will operate at an acceptable LOS. Additionally, all study area roadways will have daily traffic volumes below their capacities in build out conditions with project traffic added. Therefore, no mitigation measures are necessary for build out conditions with or without the project traffic. `

Horizon (2040) Year Background Conditions

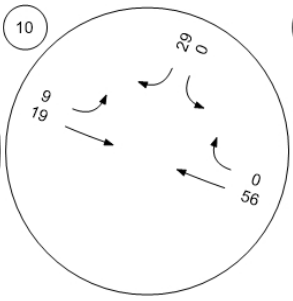
The horizon year traffic volumes without the Hillside at Lorson Ranch project are shown in Figures 19 and 20 and daily traffic volumes are shown in Figure 21.

Figure 19. Horizon Year Background Traffic Volumes (AM Peak Hour)

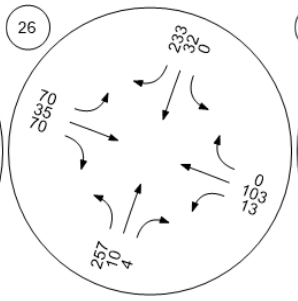
Lorson Bl/Walleye Dr



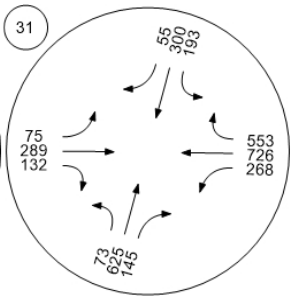
Lorson Bl/Split Mountain Dr



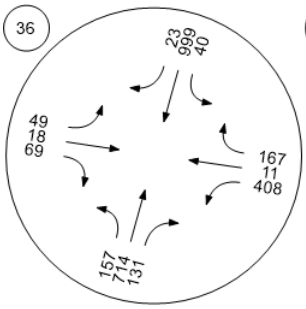
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

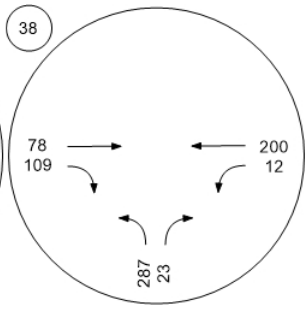
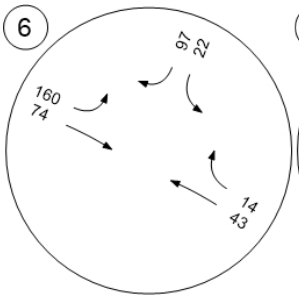
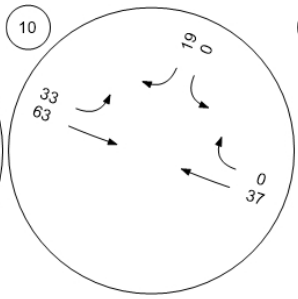


Figure 20. Horizon Year Background Traffic Volumes (PM Peak Hour)

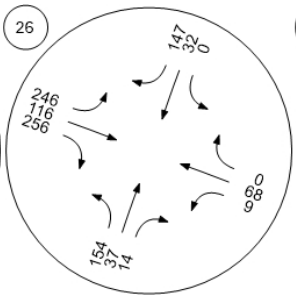
Lorson Bl/Walleye Dr



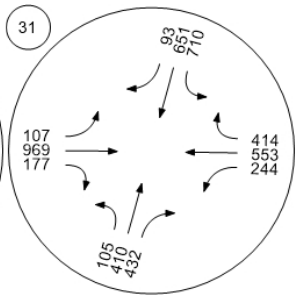
Lorson Bl/Split Mountain Dr



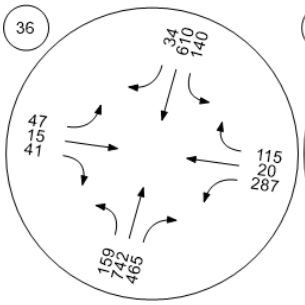
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

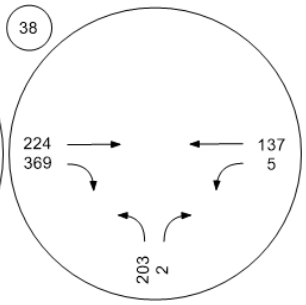
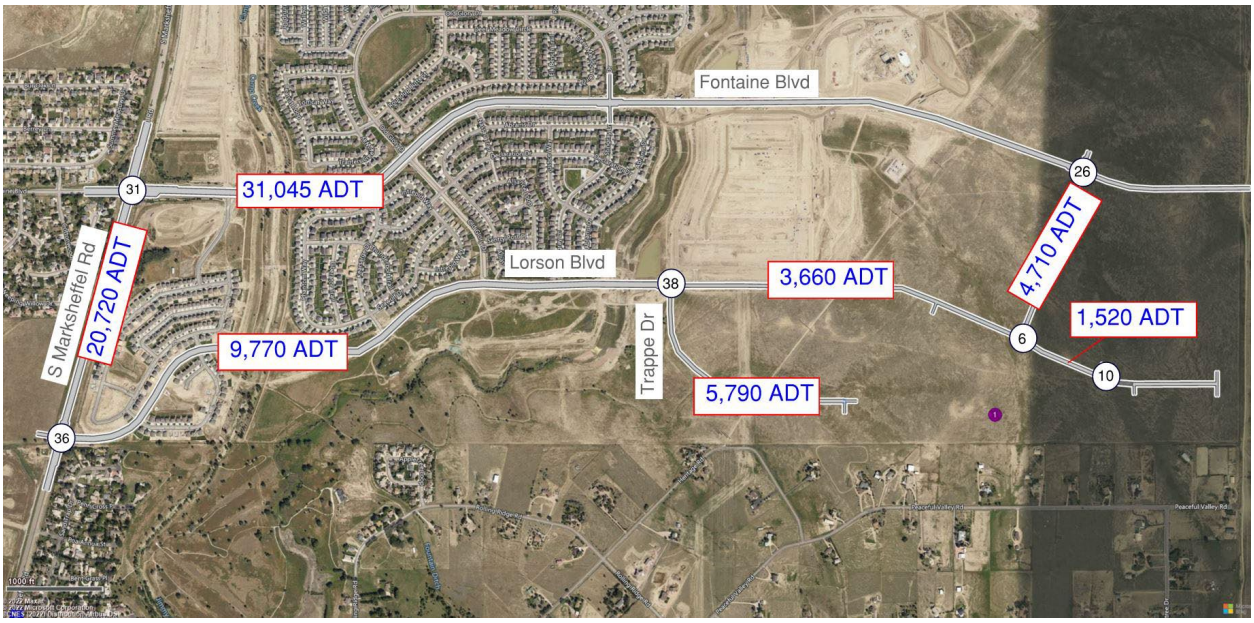


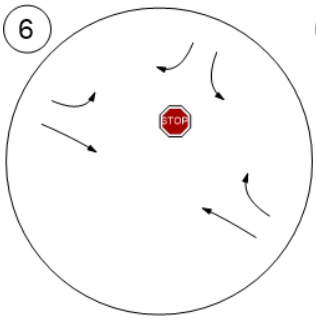
Figure 21. Horizon Background Daily Traffic Volumes



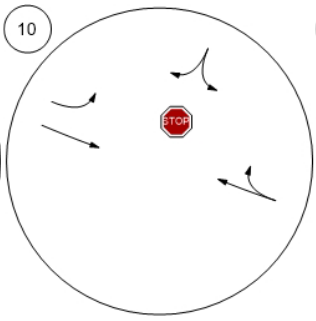
The assumed intersection configurations are shown in Figure 22. The operations of the study area intersections in the build out background (no project) scenario are shown in Tables 10 and 11.

Figure 22. Horizon Background Intersection Configurations

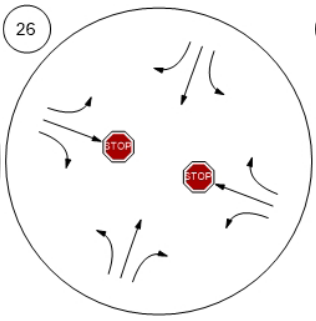
Lorson Bl/Walleye Dr



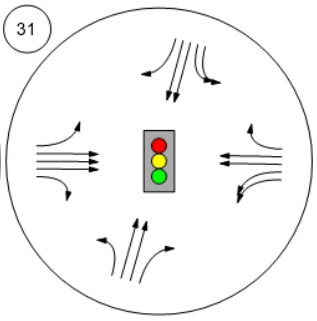
Lorson Bl/Split Mountain Dr



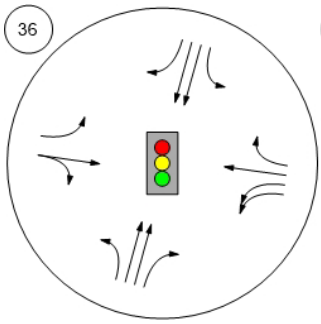
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

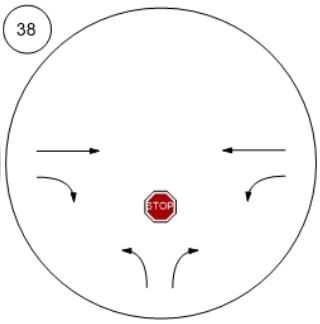


Table 10. Horizon Background Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.008	10.1	B
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.029	8.7	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	WB Thru	0.398	27.8	D
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	EB Left	0.334	35.3	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	WB Left	0.519	16.6	B
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.420	14.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 11. Horizon Background Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.043	12.3	B
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.018	8.5	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	EB Left	0.564	23.4	C
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Right	0.854	46.0	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	SB Left	0.458	12.4	B
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.324	13.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

All study area intersections are projected to operate at an acceptable LOS in the horizon year without the project traffic as shown in Tables 10 and 11. Additionally, all the roadways will carry a daily volume of traffic that is under their capacity per the El Paso County Engineering Criteria Manual. All unsignalized

intersections were check for MUTCD traffic signal warrants and none were found meeting warrants for installation of a traffic signal.

Horizon (2040) Year Total Conditions

When the project traffic is added to the 2040 background traffic, the resulting AM Peak Hour, PM Peak Hour and Daily traffic volumes are as shown in Figures 23, 24 and 25.

Figure 23. Horizon Total Traffic Volumes (AM Peak Hour)

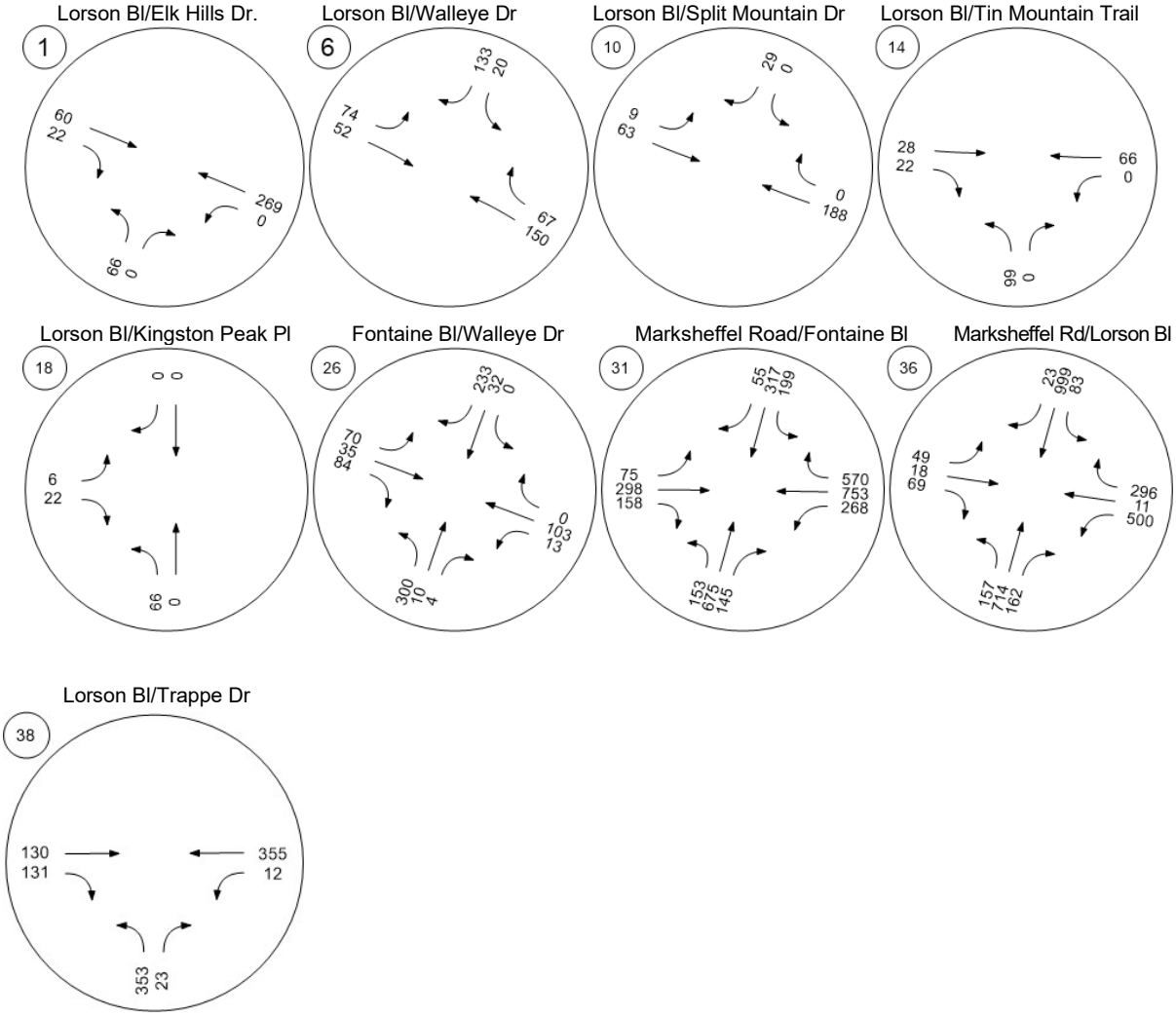
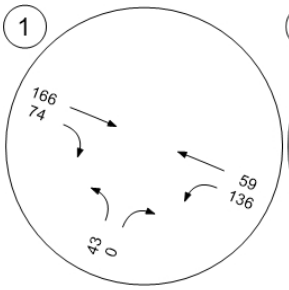
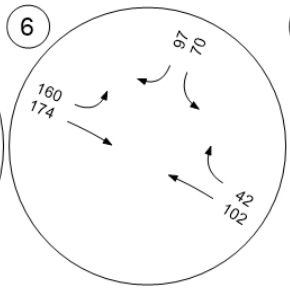


Figure 24. Horizon Total Traffic Volumes (PM Peak Hour)

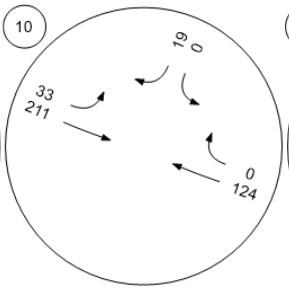
Lorson Bl/Elk Hills Dr.



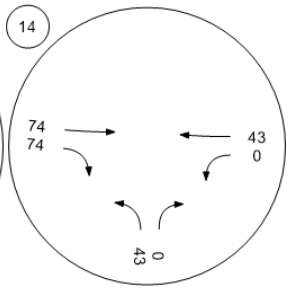
Lorson Bl/Walleye Dr



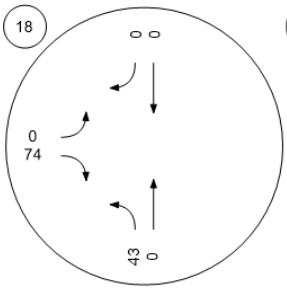
Lorson Bl/Split Mountain Dr



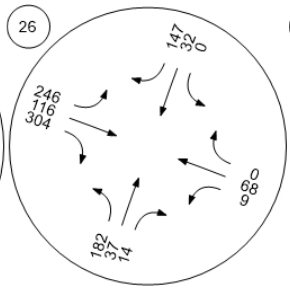
Lorson Bl/Tin Mountain Trail



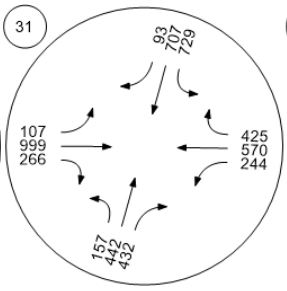
Lorson Bl/Kingston Peak Pl



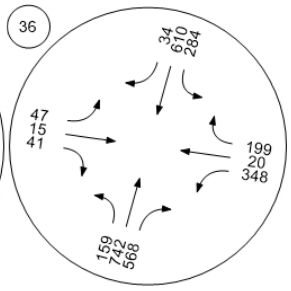
Fontaine Bl/Walleye Dr



Marksheffel Road/Fontaine Bl



Marksheffel Rd/Lorson Bl



Lorson Bl/Trappe Dr

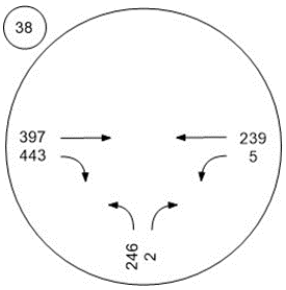
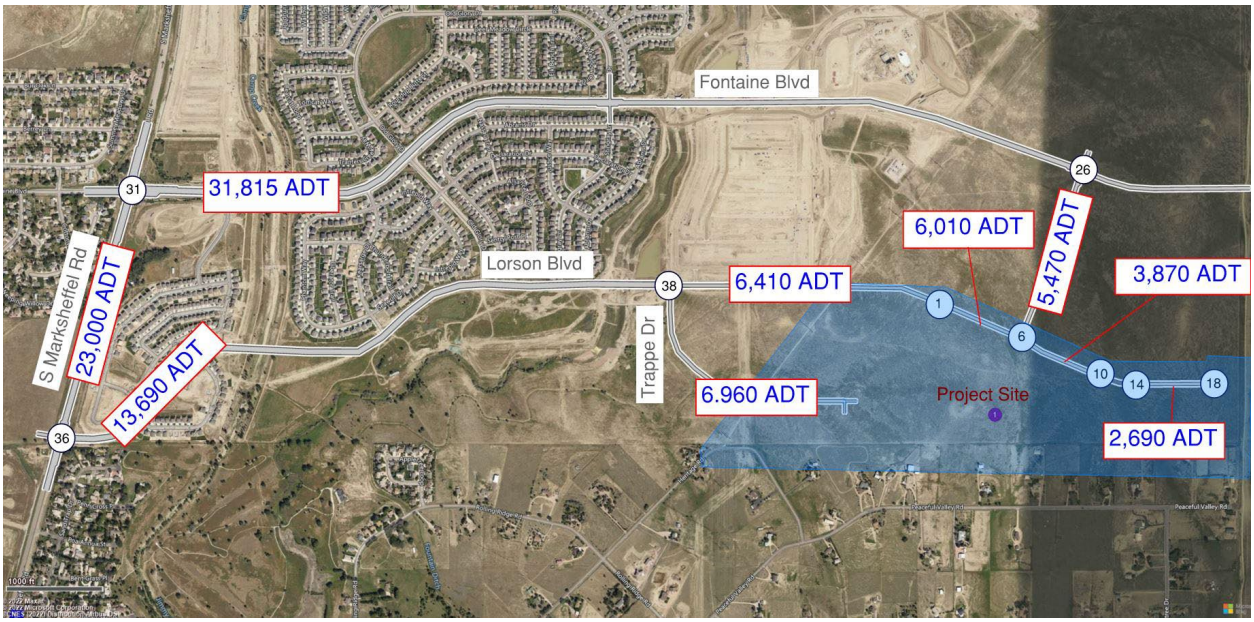


Figure 25. Horizon Total Daily Traffic Volumes



Assumed intersection configurations for the additional project intersections are shown in Figure 17.

Analysis of the intersections and roadways for build out conditions with the volumes and configurations shown above results in the operations shown in Tables 12 and 13.

Table 12. Horizon Total Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lorson Bl/Elk Hills Dr.	Two-way stop	HCM 6th Edition	NB Left	0.101	11.1	B
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.034	11.4	B
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.034	9.4	A
14	Lorson Bl/Tin Mountain Trail	Two-way stop	HCM 6th Edition	NB Left	0.073	9.3	A
18	Lorson Bl/Kingston Peak Pl	Two-way stop	HCM 6th Edition	EB Left	0.007	9.4	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	EB Left	0.370	34.8	D
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Right	0.344	42.2	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	WB Left	0.586	23.7	C
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.680	25.4	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 13. Horizon Total Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Lorson Bl/Elk Hills Dr.	Two-way stop	HCM 6th Edition	NB Left	0.095	13.7	B
6	Lorson Bl/Walleye Dr	Two-way stop	HCM 6th Edition	SB Left	0.169	15.4	C
10	Lorson Bl/Split Mountain Dr	Two-way stop	HCM 6th Edition	SB Right	0.021	9.0	A
14	Lorson Bl/Tin Mountain Trail	Two-way stop	HCM 6th Edition	NB Left	0.049	9.3	A
18	Lorson Bl/Kingston Peak Pl	Two-way stop	HCM 6th Edition	EB Right	0.068	8.6	A
26	Fontaine Bl/Walleye Dr	Two-way stop	HCM 6th Edition	EB Left	0.633	29.0	D
31	Marksheffel Road/Fontaine Blvd	Signalized	HCM 6th Edition	WB Right	0.868	52.3	D
36	Marksheffel Rd/Lorson Bl	Signalized	HCM 6th Edition	SB Left	0.900	25.0	C
38	Lorson Bl/Trappe Dr	Two-way stop	HCM 6th Edition	NB Left	0.568	23.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

All study area intersection will operate at acceptable LOS (LOS D or better) in the horizon year (2040) with the addition of project traffic. Additionally, all study area roadway segments have daily traffic volumes under the roadway capacities. No mitigation is necessary.

The addition of project traffic appears to make the intersection of Lorson Boulevard and Trappe Drive meet the Eight-Hour Vehicle Volume and Four-Hour Vehicle Volume warrants for installation of a traffic signal. The project contributes 295 trips through the intersection (out of 1,004 total trips) during the AM Peak Hour. The project contributes 392 trips through the intersection (out of 1,332 total trips) during the PM Peak Hour. A weighted average of the AM and PM peak hour trips equates to 687 project trips out of 7,336 total trips or a 29.41% contribution towards a future traffic signal at the intersection of Lorson Boulevard at Trappe Drive.

The *El Paso County Engineering Criteria Manual* requires a separate left-turn lane along Minor Arterials and lower classifications for any left-turn movement greater than 25 vehicles-per-hour and a separate right-turn lane for any right-turn movement greater than 50 vehicles-per-hour. Lorson Boulevard at Trappe Drive is already assumed to have an eastbound right-turn lane with 50-ft of storage, 155-ft of deceleration and 160-ft of taper. This requirement does not change with the additional project traffic from Hillside at Lorson Ranch. The following new intersections along Lorson Boulevard that access Hillside at Lorson Ranch will have the following turn-lane requirements:

Lorson Boulevard/Elk Hills Drive

- Eastbound Right-Turn – 100-ft storage length; 155-ft deceleration length; 160-ft bay taper
- Westbound Left-Turn – provided in center median of Lorson Boulevard

Lorson Boulevard/Tin Mountain Trail

- Eastbound Right-Turn – 100-ft storage length; 155-ft deceleration length; 160-ft bay taper
- Westbound Left-Turn – provided in center median of Lorson Boulevard

Lorson Boulevard/Kingston Peak Place

- Lorson Boulevard terminates at Kingston Peak Place, so no turn lanes are required. The through lane becomes a defacto right-turn lane and the center median provides for the left-turn lane.

Table 14 summarizes the new required improvements caused by the new development.

Table 14. Required Improvements Resulted By The New Development

Intersection	Improvement	Improvement	When
Lorson Boulevard/Elk Hills Drive	Right-turn Lane	construct an eastbound right-turn lane with 100-ft of storage, 155-ft of deceleration length and a 160-ft long bay taper	Build-out Year
Lorson Boulevard/Tin Mountain Drive	Right-turn Lane	Construct an eastbound right-turn lane with 100-ft of storage, 155-ft of deceleration length and a 160-ft long bay taper	Build-out Year
Lorson Boulevard/Trappe Drive	Traffic Signal	Contribute 29.41% fair share towards a future traffic signal which equates to $102,935.00 (29.41% of $350,000)	Build-out Year

Future traffic signal contribution at Lorson Boulevard/Marksheffel Road was previously assessed by LSC Consultants. Since the $300,000 contribution amount has already been met by other adjacent developments, no contribution is needed by The Hillside at Lorson Ranch. The Traffic Signal Contribution Table can be found in Appendix D.

Conclusions and Recommendations

The study area roadway network has been analyzed many times by multiple Lorson Ranch filings, Corvallis and The Glen at Widefield. The assumed future roadway network does not need to be mitigated to accommodate the additional traffic from Hillside at Lorson Ranch with the following exceptions:

- **Lorson Boulevard/Elk Hills Drive** – construct an eastbound right-turn lane with 100-ft of storage, 155-ft of deceleration length and a 160-ft long bay taper
- **Lorson Boulevard/Tin Mountain Drive** – construct an eastbound right-turn lane with 100-ft of storage, 155-ft of deceleration length and a 160-ft long bay taper
- **Lorson Boulevard/Trappe Drive** – contribute 29.41% fair share towards a future traffic signal which equates to $102,935.00 (29.41% of $350,000)

- Hillside at Lorson Ranch is responsible for all improvements to public facilities within the boundaries of the project and will share responsibility for the construction of Lorson Boulevard

along its northern boundary with The Ridges at Lorson Ranch (the development on the north side of Lorson Boulevard).

- Hillside at Lorson Ranch will construct the traffic signal at Marsheffel Road/Lorson Boulevard with the last plat and will use already collected fair share contributions totaling $300,000 for the construction.
- Finally, the applicant is required to pay road impact fees to El Paso County. The County allows for the applicant to pay three different upfront fee amounts. The applicant can either pay the full fee amount, a smaller upfront fee to the 5 mill Public Improvement District (PID), or an even smaller upfront fee amount to the 10 mill PID. The different fee amounts are shown in Table 15 below, calculated using 489 single-family dwelling units. The applicant will choose which fee method to follow at a later date. If the applicant chooses one of the PIDs, the PID will collect taxes over time.

Table 15. Road Impact Fee Schedule

Dwelling Units	Full Fee	5 Mill PID	10 Mill PID
489	$1,872,870	$1,235,703	$597,069

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

_____ _____

Scott D. Barnhart, P.E. #37447 Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

_____ _____

Jeff Marks *Date*

The Landhuis Company

212 N. Wahsatch Avenue, Suite 301

Colorado Springs, CO 80903

sign and date

APPENDIX A

EXISTING CONDITIONS ANALYSIS

APPENDIX A

EXISTING CONDITIONS ANALYSIS

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.377

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	38	335	73	74	160	17	25	105	45	118	198	254
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	335	73	74	160	17	25	105	45	118	198	254
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	84	18	19	40	4	6	26	11	30	50	64
Total Analysis Volume [veh/h]	38	335	73	74	160	17	25	105	45	118	198	254
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Unsign	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	36	0	0	36	0	0	24	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	39	13	13	13	13	13	13
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.65	0.22	0.22	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.03	0.20	0.08	0.10	0.01	0.03	0.03	0.03	0.11	0.06	0.18
s, saturation flow rate [veh/h]	1086	1683	941	1683	1431	845	3204	1431	1113	3204	1431
c, Capacity [veh/h]	737	1086	604	1086	923	244	711	317	311	711	317
d1, Uniform Delay [s]	5.81	4.73	7.69	4.18	3.83	22.55	18.82	18.80	23.09	19.41	22.14
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.74	0.42	0.29	0.04	0.18	0.09	0.20	0.77	0.21	4.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.31	0.12	0.15	0.02	0.10	0.15	0.14	0.38	0.28	0.80
d, Delay for Lane Group [s/veh]	5.95	5.46	8.10	4.47	3.87	22.74	18.92	19.00	23.86	19.62	26.82
Lane Group LOS	A	A	A	A	A	C	B	B	C	B	C
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.20	1.48	0.49	0.62	0.06	0.31	0.56	0.49	1.51	1.09	3.54
50th-Percentile Queue Length [ft/ln]	4.92	37.12	12.18	15.50	1.53	7.63	13.97	12.20	37.82	27.22	88.45
95th-Percentile Queue Length [veh/ln]	0.35	2.67	0.88	1.12	0.11	0.55	1.01	0.88	2.72	1.96	6.37
95th-Percentile Queue Length [ft/ln]	8.85	66.82	21.93	27.90	2.76	13.74	25.14	21.96	68.08	48.99	159.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.95	5.46	0.00	8.10	4.47	3.87	22.74	18.92	19.00	23.86	19.62	26.82
Movement LOS	A	A		A	A	A	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	5.51			5.50			19.49			23.70		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	14.87											
Intersection LOS	B											
Intersection V/C	0.377											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.71	21.71	21.71	21.71
l_p,int, Pedestrian LOS Score for Intersection	2.449	2.358	2.557	2.903
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1066	1066	666	666
d_b, Bicycle Delay [s]	6.56	6.56	13.36	13.36
l_b,int, Bicycle LOS Score for Intersection	2.175	1.974	1.704	2.030
Bicycle LOS	B	A	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.212

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	418	52	42	281	74	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	418	52	42	281	74	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	13	11	70	19	7
Total Analysis Volume [veh/h]	418	52	42	281	74	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.21	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.43	0.00	18.10	10.93
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.12	0.00	0.79	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.00	0.00	19.77	3.45
d_A, Approach Delay [s/veh]	0.00		1.10		16.13	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	2.23					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	61	230	156	259	366	33	51	294	65	69	152	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	230	156	259	366	33	51	294	65	69	152	130
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	58	39	65	92	8	13	74	16	17	38	33
Total Analysis Volume [veh/h]	61	230	156	259	366	33	51	294	65	69	152	130
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Unsign	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	36	0	0	36	0	0	24	0	0	24	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	38	38	38	38	38	14	14	14	14	14	14
g / C, Green / Cycle	0.64	0.64	0.64	0.64	0.64	0.23	0.23	0.23	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.25	0.22	0.02	0.05	0.09	0.05	0.07	0.05	0.09
s, saturation flow rate [veh/h]	887	1683	1035	1683	1431	987	3204	1431	920	3204	1431
c, Capacity [veh/h]	572	1073	692	1073	912	271	735	328	224	735	328
d1, Uniform Delay [s]	7.73	4.57	8.01	5.04	4.04	22.70	19.62	18.67	25.52	18.71	19.61
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.46	1.55	0.87	0.07	0.33	0.35	0.29	0.77	0.14	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.21	0.37	0.34	0.04	0.19	0.40	0.20	0.31	0.21	0.40
d, Delay for Lane Group [s/veh]	8.10	5.03	9.56	5.91	4.11	23.03	19.98	18.97	26.29	18.85	20.38
Lane Group LOS	A	A	A	A	A	C	B	B	C	B	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.41	0.98	1.88	1.74	0.13	0.63	1.65	0.70	0.94	0.81	1.49
50th-Percentile Queue Length [ft/ln]	10.15	24.50	46.99	43.48	3.14	15.72	41.18	17.61	23.38	20.21	37.36
95th-Percentile Queue Length [veh/ln]	0.73	1.76	3.38	3.13	0.23	1.13	2.97	1.27	1.68	1.46	2.69
95th-Percentile Queue Length [ft/ln]	18.26	44.09	84.58	78.26	5.66	28.29	74.13	31.71	42.08	36.38	67.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.10	5.03	0.00	9.56	5.91	4.11	23.03	19.98	18.97	26.29	18.85	20.38
Movement LOS	A	A		A	A	A	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	5.67			7.25			20.20			20.88		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	12.88											
Intersection LOS	B											
Intersection V/C	0.342											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.403	2.445	2.627	3.185
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1067	1067	667	667
d_b, Bicycle Delay [s]	6.53	6.53	13.34	13.34
l_b,int, Bicycle LOS Score for Intersection	2.040	2.645	1.898	1.849
Bicycle LOS	B	B	A	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Two-way stop	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.255

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	406	124	26	470	74	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	406	124	26	470	74	41
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	102	31	7	118	19	10
Total Analysis Volume [veh/h]	406	124	26	470	74	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.26	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	8.56	0.00	21.61	10.96
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.99	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.93	0.00	24.78	5.08
d_A, Approach Delay [s/veh]	0.00		0.45		17.82	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	C					

APPENDIX B

TRIP GENERATION

Scenario - 1

Scenario Name: Daily Trips
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	489	Weekday	Best Fit (LOG)	2239	2239	4478
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.92Ln(X) + 2.71	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	2239	2239	0	0	2239	2239
	4478		0		4478	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	2239	2239	4478

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2239	2239	4478
External Vehicle Trips	2239	2239	4478
New Vehicle Trips	2239	2239	4478

Scenario - 2

Scenario Name: AM Peak Hour Trips
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	489	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	88	264	352
Data Source: Trip Generation Manual, 10th Ed					T = 0.71(X) + 4.80	25%	75%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	25	75

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	88	264	0	0	88	264
	352		0		352	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	88	264	352

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	88	264	352
External Vehicle Trips	88	264	352
New Vehicle Trips	88	264	352

Scenario - 3

Scenario Name: PM Peak Hour Trips
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	489	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	294	173	467
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.96Ln(X) + 0.20	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	63	37

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	294	173	0	0	294	173
	467		0		467	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	294	173	467

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	294	173	467
External Vehicle Trips	294	173	467
New Vehicle Trips	294	173	467

APPENDIX C

BUILDOUT ANALYSIS

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.134

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	137	58	16	43	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	137	58	16	43	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	34	15	4	11	1
Total Analysis Volume [veh/h]	0	137	58	16	43	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.13	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.59	9.05	7.39	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.46	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	11.51	2.89	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.05		5.79		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	29	10	6	46	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	29	10	6	46	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	3	2	12	1
Total Analysis Volume [veh/h]	0	29	10	6	46	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.00	8.62	7.32	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.19	2.19	0.48	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.62		4.58		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.48					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.342

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	215	11	4	0	33	232	69	35	63	13	103	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	215	11	4	0	33	232	69	35	63	13	103	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	3	1	0	8	58	17	9	16	3	26	0
Total Analysis Volume [veh/h]	215	11	4	0	33	232	69	35	63	13	103	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.00	0.00	0.00	0.00	0.00	0.23	0.09	0.06	0.04	0.34	0.00
d_M, Delay for Movement [s/veh]	8.32	0.00	0.00	7.25	0.00	0.00	20.66	14.70	8.68	17.61	23.07	8.36
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	A
95th-Percentile Queue Length [veh/ln]	0.59	0.00	0.00	0.00	0.00	0.00	0.88	0.28	0.19	0.14	1.47	0.00
95th-Percentile Queue Length [ft/ln]	14.81	0.00	0.00	0.00	0.00	0.00	21.90	7.03	4.83	3.40	36.85	0.00
d_A, Approach Delay [s/veh]	7.78			0.00			14.89			22.46		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	8.85											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.551

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	3
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	216.40
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	51	375	113	151	170	17	25	243	46	246	624	488
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	375	113	151	170	17	25	243	46	246	624	488
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	94	28	38	43	4	6	61	12	62	156	122
Total Analysis Volume [veh/h]	51	375	113	151	170	17	25	243	46	246	624	488
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Unsign	Protect	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	5	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	36	0	9	45	0	0	23	0	32	55	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No		No	No			No		No	No	
Maximum Recall		No		No	No			No		No	No	
Pedestrian Recall		No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	41	41	5	50	50	22	22	22	16	42	42
g / C, Green / Cycle	0.41	0.41	0.05	0.50	0.50	0.22	0.22	0.22	0.16	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.04	0.09	0.01	0.05	0.07	0.03	0.14	0.18	0.31
s, saturation flow rate [veh/h]	1196	1870	3459	1870	1589	507	3560	1589	1781	3560	1589
c, Capacity [veh/h]	480	774	174	943	801	109	770	344	284	1481	661
d1, Uniform Delay [s]	22.68	21.51	47.17	13.53	12.43	45.13	32.98	31.65	41.01	20.70	24.64
k, delay calibration	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.17
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	2.17	11.96	0.42	0.05	1.05	0.23	0.17	7.81	0.19	2.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.48	0.87	0.18	0.02	0.23	0.32	0.13	0.87	0.42	0.74
d, Delay for Lane Group [s/veh]	23.13	23.67	59.14	13.95	12.48	46.18	33.21	31.82	48.82	20.89	27.20
Lane Group LOS	C	C	E	B	B	D	C	C	D	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.88	6.75	2.15	2.15	0.20	0.63	2.49	0.91	6.46	5.09	9.87
50th-Percentile Queue Length [ft/ln]	22.01	168.76	53.64	53.66	4.95	15.82	62.20	22.79	161.52	127.24	246.80
95th-Percentile Queue Length [veh/ln]	1.59	11.01	3.86	3.86	0.36	1.14	4.48	1.64	10.63	8.79	15.03
95th-Percentile Queue Length [ft/ln]	39.63	275.28	96.56	96.59	8.91	28.47	111.96	41.02	265.74	219.74	375.63

Movement, Approach, & Intersection Results

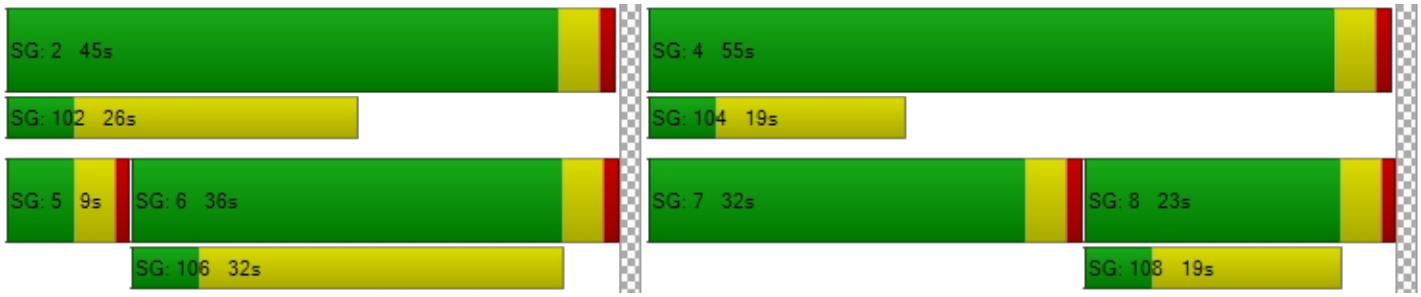
d_M, Delay for Movement [s/veh]	23.13	23.67	0.00	59.14	13.95	12.48	46.18	33.21	31.82	48.82	20.89	27.20
Movement LOS	C	C		E	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	23.61			34.06			34.04			28.22		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.97											
Intersection LOS	C											
Intersection V/C	0.551											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.42	41.42	41.42	41.42
I_p,int, Pedestrian LOS Score for Intersection	2.354	2.581	2.696	2.946
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	820	380	1020
d_b, Bicycle Delay [s]	23.14	17.42	32.82	12.02
I_b,int, Bicycle LOS Score for Intersection	2.263	2.117	1.819	2.680
Bicycle LOS	B	B	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	458	133	53	409	330	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	458	133	53	409	330	81
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	33	13	102	83	20
Total Analysis Volume [veh/h]	458	133	53	409	330	81
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	26	0	12	38	22	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	8	34	18	18
g / C, Green / Cycle	0.37	0.37	0.13	0.57	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.27	0.09	0.03	0.24	0.21	0.06
s, saturation flow rate [veh/h]	1683	1431	1603	1683	1603	1431
c, Capacity [veh/h]	617	525	214	954	481	429
d1, Uniform Delay [s]	16.53	13.27	23.30	7.44	18.51	15.58
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.86	1.16	2.76	1.41	7.76	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.25	0.25	0.43	0.69	0.19
d, Delay for Lane Group [s/veh]	24.40	14.43	26.06	8.85	26.27	16.56
Lane Group LOS	C	B	C	A	C	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.18	1.29	0.80	2.72	4.69	0.87
50th-Percentile Queue Length [ft/ln]	154.38	32.35	19.93	67.93	117.16	21.75
95th-Percentile Queue Length [veh/ln]	10.25	2.33	1.43	4.89	8.24	1.57
95th-Percentile Queue Length [ft/ln]	256.26	58.24	35.87	122.28	205.92	39.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.40	14.43	26.06	8.85	26.27	16.56
Movement LOS	C	B	C	A	C	B
d_A, Approach Delay [s/veh]	22.15		10.83		24.36	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	19.20					
Intersection LOS	B					
Intersection V/C	0.511					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.353	2.246	2.115
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	1133	600
d_b, Bicycle Delay [s]	12.03	5.63	14.70
l_b,int, Bicycle LOS Score for Intersection	2.535	2.322	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	24	0	30	8	0	62
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	0	30	8	0	62
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	8	2	0	16
Total Analysis Volume [veh/h]	24	0	30	8	0	62
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.07	8.45	0.00	0.00	7.29	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.03	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.07		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.099

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	103	171	56	33	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	103	171	56	33	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	26	43	14	8	0
Total Analysis Volume [veh/h]	0	103	171	56	33	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.10	0.11	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.94	8.84	7.56	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.33	0.36	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.22	9.09	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84		5.69		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.07					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	20	34	22	13	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	20	34	22	13	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	9	6	3	0
Total Analysis Volume [veh/h]	0	20	34	22	13	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.17	8.44	7.29	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.06	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.43	1.43	1.62	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.44		4.43		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.68					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	134	40	16	0	23	146	244	114	223	9	67	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	40	16	0	23	146	244	114	223	9	67	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	10	4	0	6	37	61	29	56	2	17	0
Total Analysis Volume [veh/h]	134	40	16	0	23	146	244	114	223	9	67	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00	0.51	0.22	0.21	0.03	0.15	0.00
d_M, Delay for Movement [s/veh]	7.82	0.00	0.00	7.32	0.00	0.00	20.03	13.82	9.33	19.20	14.63	8.49
Movement LOS	A	A	A	A	A	A	C	B	A	C	B	A
95th-Percentile Queue Length [veh/ln]	0.31	0.00	0.00	0.00	0.00	0.00	2.83	0.83	0.80	0.11	0.53	0.00
95th-Percentile Queue Length [ft/ln]	7.87	0.00	0.00	0.00	0.00	0.00	70.86	20.64	19.98	2.65	13.29	0.00
d_A, Approach Delay [s/veh]	5.52			0.00			14.70			15.17		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	10.57											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	70	258	310	551	403	33	51	816	69	159	452	295
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	258	310	551	403	33	51	816	69	159	452	295
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	65	78	138	101	8	13	204	17	40	113	74
Total Analysis Volume [veh/h]	70	258	310	551	403	33	51	816	69	159	452	295
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Unsign	Protect	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	5	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	36	0	24	60	0	0	23	0	27	50	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No		No	No			No		No	No	
Maximum Recall		No		No	No			No		No	No	
Pedestrian Recall		No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	20	56	56	29	29	29	13	46	46
g / C, Green / Cycle	0.29	0.29	0.18	0.51	0.51	0.26	0.26	0.26	0.12	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.08	0.15	0.18	0.24	0.02	0.08	0.25	0.05	0.10	0.14	0.21
s, saturation flow rate [veh/h]	857	1683	3113	1683	1431	643	3204	1431	1603	3204	1431
c, Capacity [veh/h]	171	492	566	859	730	160	846	377	187	1336	596
d1, Uniform Delay [s]	46.00	32.55	44.74	17.34	13.50	43.53	39.99	31.32	47.64	21.77	23.56
k, delay calibration	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.06	3.97	12.38	1.84	0.12	1.14	8.32	0.23	10.23	0.15	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.52	0.97	0.47	0.05	0.32	0.97	0.18	0.85	0.34	0.49
d, Delay for Lane Group [s/veh]	53.06	36.52	57.12	19.18	13.62	44.67	48.31	31.55	57.87	21.92	24.20
Lane Group LOS	D	D	E	B	B	D	D	C	E	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.16	6.26	8.38	6.85	0.43	1.33	11.70	1.44	4.79	3.95	5.65
50th-Percentile Queue Length [ft/ln]	53.97	156.48	209.42	171.20	10.81	33.36	292.52	36.11	119.67	98.80	141.21
95th-Percentile Queue Length [veh/ln]	3.89	10.36	13.12	11.14	0.78	2.40	17.31	2.60	8.37	7.11	9.55
95th-Percentile Queue Length [ft/ln]	97.15	259.06	328.08	278.49	19.45	60.06	432.77	65.00	209.37	177.84	238.66

Movement, Approach, & Intersection Results

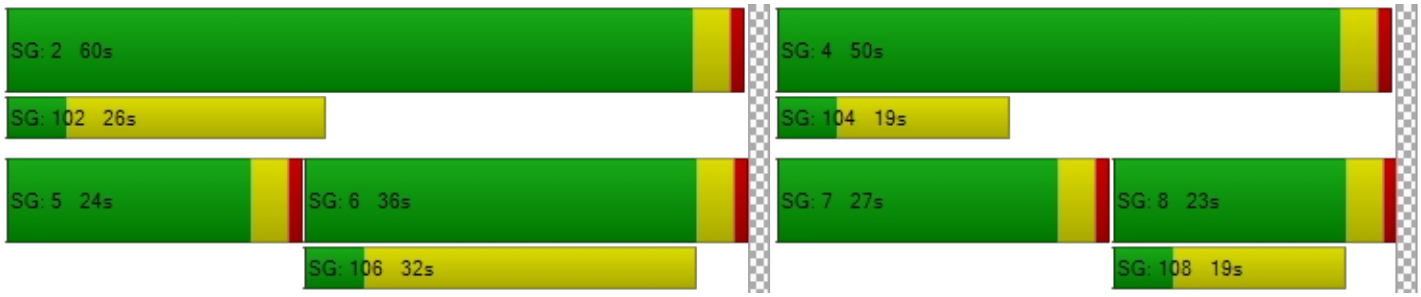
d_M, Delay for Movement [s/veh]	53.06	36.52	0.00	57.12	19.18	13.62	44.67	48.31	31.55	57.87	21.92	24.20
Movement LOS	D	D		E	B	B	D	D	C	E	C	C
d_A, Approach Delay [s/veh]	40.05			40.17			46.88			28.97		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	38.93											
Intersection LOS	D											
Intersection V/C	0.684											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
I_p,int, Pedestrian LOS Score for Intersection	2.376	2.694	2.806	3.014
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	1018	345	836
d_b, Bicycle Delay [s]	27.66	13.26	37.64	18.62
I_b,int, Bicycle LOS Score for Intersection	2.101	3.188	2.332	2.307
Bicycle LOS	B	C	B	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	31.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	560	431	67	560	255	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	560	431	67	560	255	79
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	108	17	140	64	20
Total Analysis Volume [veh/h]	560	431	67	560	255	79
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	161	0	0	161	79	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	157	157	157	157	75	75
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.33	0.30	0.13	0.33	0.16	0.06
s, saturation flow rate [veh/h]	1683	1431	511	1683	1603	1431
c, Capacity [veh/h]	1101	936	272	1101	501	447
d1, Uniform Delay [s]	21.51	20.54	38.30	21.51	67.45	60.03
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	1.63	2.15	1.68	3.67	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.46	0.25	0.51	0.51	0.18
d, Delay for Lane Group [s/veh]	23.19	22.17	40.45	23.19	71.12	60.90
Lane Group LOS	C	C	D	C	E	E
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	17.44	12.87	2.65	17.44	13.53	3.70
50th-Percentile Queue Length [ft/ln]	436.07	321.67	66.18	436.07	338.35	92.46
95th-Percentile Queue Length [veh/ln]	24.29	18.75	4.76	24.29	19.57	6.66
95th-Percentile Queue Length [ft/ln]	607.30	468.74	119.12	607.30	489.19	166.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.19	22.17	40.45	23.19	71.12	60.90
Movement LOS	C	C	D	C	E	E
d_A, Approach Delay [s/veh]	22.75		25.03		68.70	
Approach LOS	C		C		E	
d_I, Intersection Delay [s/veh]	31.34					
Intersection LOS	C					
Intersection V/C	0.492					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	111.17	111.17	111.17
l_p,int, Pedestrian LOS Score for Intersection	2.573	2.398	2.352
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1308	1308	625
d_b, Bicycle Delay [s]	14.35	14.35	56.72
l_b,int, Bicycle LOS Score for Intersection	3.195	2.594	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	15	0	66	26	0	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	0	66	26	0	40
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	0	17	7	0	10
Total Analysis Volume [veh/h]	15	0	66	26	0	40
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.11	8.61	0.00	0.00	7.40	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.28	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.11		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.93					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Lorson Bl/Elk Hills Dr.

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	30	0	0	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	30	22	0	89
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	60	22	0	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	15	6	0	67
Total Analysis Volume [veh/h]	66	0	60	22	0	269
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.10	9.24	0.00	0.00	7.38	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.33	0.33	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.35	8.35	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.10		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	137	58	16	43	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	30	89	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	137	58	46	132	45
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	34	15	12	33	11
Total Analysis Volume [veh/h]	14	137	58	46	132	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.15	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.67	9.77	7.68	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.54	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.65	13.54	3.24	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.85		4.29		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.48					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	29	10	6	46	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	44	132	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	29	10	50	178	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	3	13	45	1
Total Analysis Volume [veh/h]	0	29	10	50	178	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.05	9.31	7.60	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.60	2.60	0.54	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.31		1.27		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.29					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 14: Lorson Bl/Tin Mountain Trail

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	22	22	0	66
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	28	22	0	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	7	6	0	17
Total Analysis Volume [veh/h]	66	0	28	22	0	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.35	8.81	0.00	0.00	7.31	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.97	5.97	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.35		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.39					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Lorson Bl/Kingston Peak Pl

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	0	0	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	0	0	6	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	0	0	2	6
Total Analysis Volume [veh/h]	66	0	0	0	6	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	7.31	0.00	0.00	0.00	9.39	8.39
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.02	0.06
95th-Percentile Queue Length [ft/ln]	3.18	3.18	0.00	0.00	0.55	1.55
d_A, Approach Delay [s/veh]	7.31		0.00		8.60	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.70					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.400

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	215	11	4	0	33	232	69	35	63	13	103	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	0	0	0	0	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	11	4	0	33	232	69	35	77	13	103	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	1	0	8	58	17	9	19	3	26	0
Total Analysis Volume [veh/h]	258	11	4	0	33	232	69	35	77	13	103	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.00	0.00	0.00	0.00	0.29	0.10	0.07	0.05	0.40	0.00
d_M, Delay for Movement [s/veh]	8.46	0.00	0.00	7.25	0.00	0.00	26.09	16.48	8.74	20.54	27.97	8.36
Movement LOS	A	A	A	A	A	A	D	C	A	C	D	A
95th-Percentile Queue Length [veh/ln]	0.74	0.00	0.00	0.00	0.00	0.00	1.16	0.33	0.24	0.17	1.83	0.00
95th-Percentile Queue Length [ft/ln]	18.48	0.00	0.00	0.00	0.00	0.00	28.90	8.31	5.98	4.19	45.63	0.00
d_A, Approach Delay [s/veh]	7.99			0.00			16.85			27.14		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	10.04											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	3
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	216.40
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	51	375	113	151	170	17	25	243	46	246	624	488
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	80	50	0	6	17	0	0	9	26	0	27	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	425	113	157	187	17	25	252	72	246	651	505
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	106	28	39	47	4	6	63	18	62	163	126
Total Analysis Volume [veh/h]	131	425	113	157	187	17	25	252	72	246	651	505
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	5	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	36	0	11	47	0	0	23	0	20	43	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No		No	No			No		No	No	
Maximum Recall		No		No	No			No		No	No	
Pedestrian Recall		No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	33	33	33	6	43	43	19	19	19	16	39	39
g / C, Green / Cycle	0.36	0.36	0.36	0.07	0.48	0.48	0.22	0.22	0.22	0.17	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.12	0.25	0.08	0.05	0.11	0.01	0.06	0.08	0.05	0.15	0.20	0.35
s, saturation flow rate [veh/h]	1060	1683	1431	3113	1683	1431	437	3204	1431	1603	3204	1431
c, Capacity [veh/h]	376	614	522	220	808	687	99	686	306	277	1382	617
d1, Uniform Delay [s]	26.66	24.31	19.73	40.94	13.70	12.32	43.54	30.17	29.27	36.41	18.28	22.51
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.32
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.53	6.31	0.95	4.25	0.67	0.07	1.32	0.33	0.39	9.47	0.25	7.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.35	0.69	0.22	0.71	0.23	0.02	0.25	0.37	0.23	0.89	0.47	0.82
d, Delay for Lane Group [s/veh]	29.19	30.62	20.68	45.19	14.37	12.39	44.87	30.50	29.66	45.88	18.53	30.30
Lane Group LOS	C	C	C	D	B	B	D	C	C	D	B	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.53	8.48	1.74	1.81	2.28	0.19	0.59	2.32	1.30	5.90	4.67	10.17
50th-Percentile Queue Length [ft/ln]	63.22	211.97	43.38	45.32	57.10	4.68	14.74	58.02	32.56	147.59	116.77	254.19
95th-Percentile Queue Length [veh/ln]	4.55	13.25	3.12	3.26	4.11	0.34	1.06	4.18	2.34	9.89	8.22	15.40
95th-Percentile Queue Length [ft/ln]	113.80	331.35	78.08	81.57	102.79	8.42	26.52	104.43	58.61	247.21	205.39	384.93

Movement, Approach, & Intersection Results

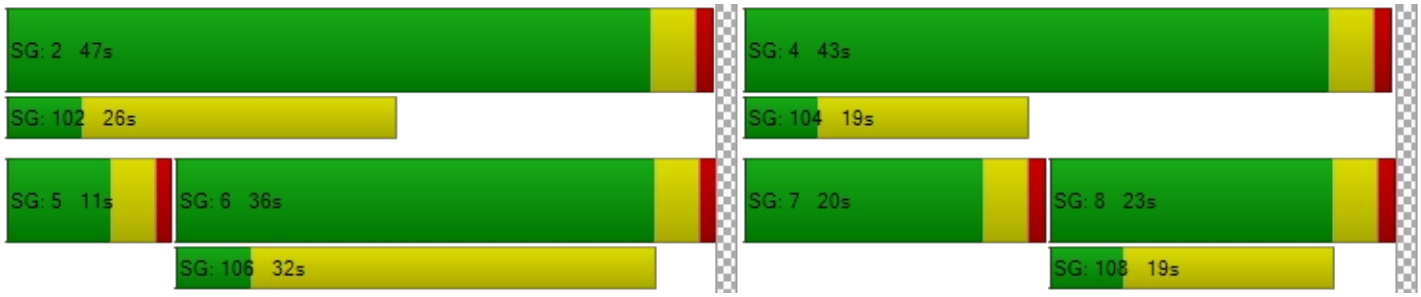
d_M, Delay for Movement [s/veh]	29.19	30.62	20.68	45.19	14.37	12.39	44.87	30.50	29.66	45.88	18.53	30.30
Movement LOS	C	C	C	D	B	B	D	C	C	D	B	C
d_A, Approach Delay [s/veh]	28.66			27.68			31.36			27.57		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.32											
Intersection LOS	C											
Intersection V/C	0.656											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	36.46	36.46	36.46	36.46
l_p,int, Pedestrian LOS Score for Intersection	2.419	2.594	2.827	2.961
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	711	955	422	866
d_b, Bicycle Delay [s]	18.70	12.28	28.02	14.46
l_b,int, Bicycle LOS Score for Intersection	2.663	2.155	1.848	2.716
Bicycle LOS	B	B	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	458	133	53	409	330	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	43	0	92	129
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	458	164	96	409	422	210
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	41	24	102	106	53
Total Analysis Volume [veh/h]	458	164	96	409	422	210
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	26	0	12	38	22	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	22	22	8	34	18	18
g / C, Green / Cycle	0.37	0.37	0.13	0.57	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.27	0.11	0.06	0.24	0.26	0.15
s, saturation flow rate [veh/h]	1683	1431	1603	1683	1603	1431
c, Capacity [veh/h]	617	525	214	954	481	429
d1, Uniform Delay [s]	16.53	13.59	23.97	7.44	19.95	17.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.86	1.55	6.69	1.41	19.76	3.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.31	0.45	0.43	0.88	0.49
d, Delay for Lane Group [s/veh]	24.40	15.14	30.66	8.85	39.71	21.18
Lane Group LOS	C	B	C	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.18	1.65	1.58	2.72	7.67	2.63
50th-Percentile Queue Length [ft/ln]	154.38	41.18	39.44	67.93	191.74	65.82
95th-Percentile Queue Length [veh/ln]	10.25	2.97	2.84	4.89	12.21	4.74
95th-Percentile Queue Length [ft/ln]	256.26	74.13	70.99	122.28	305.28	118.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.40	15.14	30.66	8.85	39.71	21.18
Movement LOS	C	B	C	A	D	C
d_A, Approach Delay [s/veh]	21.96		13.00		33.55	
Approach LOS	C		B		C	
d_I, Intersection Delay [s/veh]	23.55					
Intersection LOS	C					
Intersection V/C	0.595					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.393	2.302	2.211
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	1133	600
d_b, Bicycle Delay [s]	12.03	5.63	14.70
l_b,int, Bicycle LOS Score for Intersection	2.586	2.393	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.130

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	24	0	30	8	0	62
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	52	22	0	155
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	0	82	30	0	217
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	21	8	0	54
Total Analysis Volume [veh/h]	90	0	82	30	0	217
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.97	8.68	0.00	0.00	7.44	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	11.14	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.97		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.36					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: Lorson Bl/Elk Hills Dr.

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	66	0	136	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	100	74	0	59
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	166	74	136	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	42	19	34	15
Total Analysis Volume [veh/h]	43	0	166	74	136	59
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.10	0.00
d_M, Delay for Movement [s/veh]	13.74	10.12	0.00	0.00	8.02	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.34	0.00
95th-Percentile Queue Length [ft/ln]	7.78	7.78	0.00	0.00	8.55	0.00
d_A, Approach Delay [s/veh]	13.74		0.00		5.60	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	103	171	56	33	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	48	0	0	100	59	28
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	103	171	156	92	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	26	43	39	23	7
Total Analysis Volume [veh/h]	48	103	171	156	92	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.11	0.12	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.80	9.17	7.78	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.39	0.36	0.39	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	9.72	8.93	9.87	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.96		4.07		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.99					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	20	34	22	13	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	148	87	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	20	34	170	100	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	9	43	25	0
Total Analysis Volume [veh/h]	0	20	34	170	100	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.68	8.85	7.47	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.60	1.60	1.75	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.85		1.24		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.33					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 14: Lorson Bl/Tin Mountain Trail

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	74	74	0	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	74	74	0	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	19	19	0	11
Total Analysis Volume [veh/h]	43	0	74	74	0	43
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.53	9.05	0.00	0.00	7.51	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.05	4.05	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.53		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.75					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Lorson Bl/Kingston Peak Pl

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

Intersection Setup

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	0	0	0	74
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	0	0	0	74
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	0	0	0	19
Total Analysis Volume [veh/h]	43	0	0	0	0	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	7.28	0.00	0.00	0.00	9.04	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.22
95th-Percentile Queue Length [ft/ln]	2.04	2.04	0.00	0.00	0.00	5.48
d_A, Approach Delay [s/veh]	7.28		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.09					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	24.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	134	40	16	0	23	146	244	114	223	9	67	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	0	0	0	0	0	0	48	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	40	16	0	23	146	244	114	271	9	67	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	10	4	0	6	37	61	29	68	2	17	0
Total Analysis Volume [veh/h]	162	40	16	0	23	146	244	114	271	9	67	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.00	0.00	0.00	0.57	0.24	0.26	0.04	0.17	0.00
d_M, Delay for Movement [s/veh]	7.89	0.00	0.00	7.32	0.00	0.00	24.02	14.97	9.59	22.82	15.78	8.49
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	A
95th-Percentile Queue Length [veh/ln]	0.39	0.00	0.00	0.00	0.00	0.00	3.46	0.93	1.03	0.13	0.59	0.00
95th-Percentile Queue Length [ft/ln]	9.72	0.00	0.00	0.00	0.00	0.00	86.57	23.24	25.69	3.32	14.85	0.00
d_A, Approach Delay [s/veh]	5.86			0.00			16.16			16.61		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	11.64											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	46.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.719

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	70	258	310	551	403	33	51	816	69	159	452	295
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	32	0	19	56	0	0	30	89	0	17	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	290	310	570	459	33	51	846	158	159	469	306
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	73	78	143	115	8	13	212	40	40	117	77
Total Analysis Volume [veh/h]	122	290	310	570	459	33	51	846	158	159	469	306
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Unsign	Protect	Permis	Permis	Permis	Permis	Permis	Protect	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	5	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	38	0	24	62	0	0	32	0	16	48	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	0	0	21	0	0	14	0	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No		No	No			No		No	No	
Maximum Recall		No		No	No			No		No	No	
Pedestrian Recall		No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	34	34	20	58	58	28	28	28	12	44	44
g / C, Green / Cycle	0.31	0.31	0.18	0.53	0.53	0.25	0.25	0.25	0.11	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.15	0.17	0.18	0.27	0.02	0.08	0.26	0.11	0.10	0.15	0.21
s, saturation flow rate [veh/h]	814	1683	3113	1683	1431	626	3204	1431	1603	3204	1431
c, Capacity [veh/h]	163	522	566	889	756	146	812	362	175	1278	570
d1, Uniform Delay [s]	49.77	31.61	45.00	16.82	12.52	45.48	41.07	34.48	48.46	23.29	25.29
k, delay calibration	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.12
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	26.79	4.22	19.30	2.14	0.11	1.43	27.31	0.83	15.95	0.18	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.56	1.01	0.52	0.04	0.35	1.04	0.44	0.91	0.37	0.54
d, Delay for Lane Group [s/veh]	76.55	35.83	64.30	18.95	12.63	46.91	68.38	35.31	64.41	23.47	26.14
Lane Group LOS	E	D	F	B	B	D	F	D	E	C	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.59	6.99	9.17	7.81	0.41	1.38	13.90	3.62	5.07	4.28	6.16
50th-Percentile Queue Length [ft/ln]	114.67	174.79	229.19	195.30	10.32	34.38	347.52	90.52	126.78	107.02	153.92
95th-Percentile Queue Length [veh/ln]	8.10	11.33	14.18	12.40	0.74	2.48	20.50	6.52	8.76	7.67	10.23
95th-Percentile Queue Length [ft/ln]	202.48	283.19	354.56	309.90	18.57	61.89	512.52	162.93	219.10	191.86	255.65

Movement, Approach, & Intersection Results

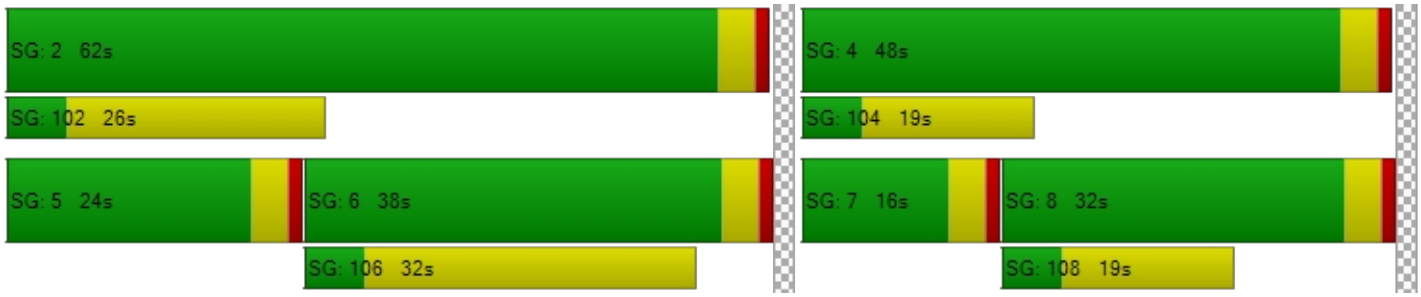
d_M, Delay for Movement [s/veh]	76.55	35.83	0.00	64.30	18.95	12.63	46.91	68.38	35.31	64.41	23.47	26.14
Movement LOS	E	D		F	B	B	D	F	D	E	C	C
d_A, Approach Delay [s/veh]	47.89			43.10			62.39			31.31		
Approach LOS	D			D			E			C		
d_I, Intersection Delay [s/veh]	46.37											
Intersection LOS	D											
Intersection V/C	0.719											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.432	2.717	2.910	3.023
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	1054	509	800
d_b, Bicycle Delay [s]	26.26	12.29	30.57	19.80
l_b,int, Bicycle LOS Score for Intersection	2.239	3.312	2.430	2.330
Bicycle LOS	B	C	B	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	39.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	1	0
Entry Pocket Length [ft]	100.00	250.00	400.00	100.00	250.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Marksheffel Rd		Marksheffel Rd		Lorson Bl	
Base Volume Input [veh/h]	560	431	67	560	255	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	103	144	0	61	84
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	560	534	211	560	316	163
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	134	53	140	79	41
Total Analysis Volume [veh/h]	560	534	211	560	316	163
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street [	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor stree	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street [	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	10	0	0	10	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	161	0	0	161	79	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	157	157	157	157	75	75
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.33	0.37	0.45	0.33	0.20	0.11
s, saturation flow rate [veh/h]	1683	1431	464	1683	1603	1431
c, Capacity [veh/h]	1101	936	250	1101	501	447
d1, Uniform Delay [s]	21.51	22.90	61.05	21.51	70.65	64.01
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	2.52	28.10	1.68	5.93	2.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.57	0.85	0.51	0.63	0.36
d, Delay for Lane Group [s/veh]	23.19	25.42	89.15	23.19	76.58	66.30
Lane Group LOS	C	C	F	C	E	E
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	17.44	17.84	14.42	17.44	17.73	8.19
50th-Percentile Queue Length [ft/ln]	436.07	446.08	360.54	436.07	443.25	204.64
95th-Percentile Queue Length [veh/ln]	24.29	24.77	20.65	24.29	24.64	12.88
95th-Percentile Queue Length [ft/ln]	607.30	619.27	516.24	607.30	615.88	321.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.19	25.42	89.15	23.19	76.58	66.30
Movement LOS	C	C	F	C	E	E
d_A, Approach Delay [s/veh]	24.28		41.24		73.08	
Approach LOS	C		D		E	
d_I, Intersection Delay [s/veh]	39.83					
Intersection LOS	D					
Intersection V/C	0.652					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	111.17	111.17	111.17
l_p,int, Pedestrian LOS Score for Intersection	2.627	2.472	2.684
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1308	1308	625
d_b, Bicycle Delay [s]	14.35	14.35	56.72
l_b,int, Bicycle LOS Score for Intersection	3.365	2.832	1.560
Bicycle LOS	C	C	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	15	0	66	26	0	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	173	74	0	102
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	0	239	100	0	142
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	0	60	25	0	36
Total Analysis Volume [veh/h]	58	0	239	100	0	142
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.39	9.50	0.00	0.00	7.95	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.69	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.39		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.23					
Intersection LOS	B					

APPENDIX D

HORIZON YEAR ANALYSIS

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	6	133	74	22	61	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	133	74	22	61	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	33	19	6	15	6
Total Analysis Volume [veh/h]	6	133	74	22	61	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.13	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.12	9.20	7.50	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.46	0.15	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.64	11.60	3.86	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.24		5.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.75					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	29	9	19	56	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	29	9	19	56	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	2	5	14	0
Total Analysis Volume [veh/h]	0	29	9	19	56	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.10	8.67	7.34	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.21	2.21	0.44	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.67		2.36		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.81					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	27.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.398

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	257	10	4	0	32	233	70	35	70	13	103	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	257	10	4	0	32	233	70	35	70	13	103	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	3	1	0	8	58	18	9	18	3	26	0
Total Analysis Volume [veh/h]	257	10	4	0	32	233	70	35	70	13	103	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.00	0.00	0.00	0.00	0.29	0.10	0.07	0.05	0.40	0.00
d_M, Delay for Movement [s/veh]	8.45	0.00	0.00	7.24	0.00	0.00	25.94	16.41	8.70	20.23	27.79	8.36
Movement LOS	A	A	A	A	A	A	D	C	A	C	D	A
95th-Percentile Queue Length [veh/ln]	0.74	0.00	0.00	0.00	0.00	0.00	1.16	0.33	0.22	0.16	1.81	0.00
95th-Percentile Queue Length [ft/ln]	18.39	0.00	0.00	0.00	0.00	0.00	29.12	8.25	5.39	4.10	45.32	0.00
d_A, Approach Delay [s/veh]	8.02			0.00			17.14			26.94		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	10.03											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.334

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	3
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	216.40
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	73	625	145	193	300	55	75	289	132	268	726	553
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	625	145	193	300	55	75	289	132	268	726	553
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	156	36	48	75	14	19	72	33	67	182	138
Total Analysis Volume [veh/h]	73	625	145	193	300	55	75	289	132	268	726	553
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla
Signal Group	1	6	6	5	2	2	3	8	8	7	4	4
Auxiliary Signal Groups			6,7			2,3			1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	10	10	5	10	10
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	32	36	36	26	30	30	12	30	30	18	36	36
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	5	0	5	5
Pedestrian Clearance [s]	0	27	27	0	21	21	0	21	21	0	21	21
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	9	37	53	22	50	61	6	23	36	12	28	54
g / C, Green / Cycle	0.08	0.34	0.48	0.20	0.46	0.55	0.06	0.21	0.33	0.11	0.26	0.50
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.10	0.06	0.09	0.04	0.05	0.06	0.09	0.09	0.23	0.39
s, saturation flow rate [veh/h]	1603	3204	1431	3113	3204	1431	1603	4584	1431	3113	3204	1431
c, Capacity [veh/h]	131	1081	687	623	1459	788	95	966	471	331	828	708
d1, Uniform Delay [s]	48.61	30.03	16.56	37.55	18.01	11.55	51.14	36.59	27.29	48.10	39.16	22.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.50
I, Upstream Filtering 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
d2, Incremental Delay [s]	3.63	2.26	0.70	0.28	0.32	0.17	13.76	0.17	0.32	4.72	3.18	8.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.56	0.58	0.21	0.31	0.21	0.07	0.79	0.30	0.28	0.81	0.88	0.78
d, Delay for Lane Group [s/veh]	52.24	32.29	17.26	37.83	18.33	11.73	64.90	36.76	27.62	52.82	42.34	31.30
Lane Group LOS	D	C	B	D	B	B	E	D	C	D	D	C
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.06	7.08	2.23	2.24	2.34	0.66	2.40	2.20	2.61	3.80	9.65	12.96
50th-Percentile Queue Length [ft/ln]	51.49	177.07	55.85	56.08	58.48	16.44	59.97	54.96	65.15	95.02	241.20	324.08
95th-Percentile Queue Length [veh/ln]	3.71	11.45	4.02	4.04	4.21	1.18	4.32	3.96	4.69	6.84	14.74	18.87
95th-Percentile Queue Length [ft/ln]	92.69	286.19	100.53	100.95	105.27	29.60	107.95	98.92	117.28	171.04	368.55	471.69

Movement, Approach, & Intersection Results

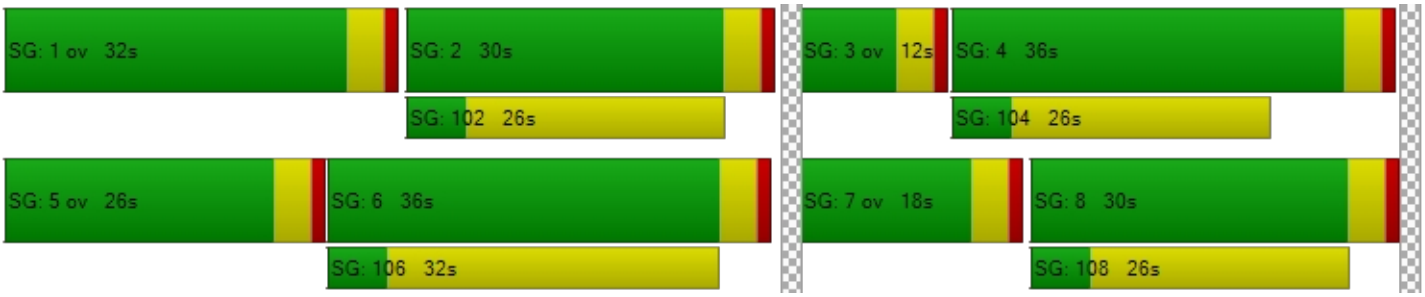
d_M, Delay for Movement [s/veh]	52.24	32.29	17.26	37.83	18.33	11.73	64.90	36.76	27.62	52.82	42.34	31.30
Movement LOS	D	C	B	D	B	B	E	D	C	D	D	C
d_A, Approach Delay [s/veh]	31.43			24.54			38.58			40.21		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.32											
Intersection LOS	D											
Intersection V/C	0.334											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.39	46.39	46.39	46.39
I_p,int, Pedestrian LOS Score for Intersection	2.715	2.856	2.793	3.096
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	473	473	582
d_b, Bicycle Delay [s]	27.68	32.10	32.10	27.68
I_b,int, Bicycle LOS Score for Intersection	2.255	2.012	1.832	2.836
Bicycle LOS	B	B	A	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	16.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	250.00	400.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Base Volume Input [veh/h]	157	714	131	40	999	23	49	18	69	408	11	167
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	714	131	40	999	23	49	18	69	408	11	167
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	179	33	10	250	6	12	5	17	102	3	42
Total Analysis Volume [veh/h]	157	714	131	40	999	23	49	18	69	408	11	167
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	9	41	0	0	19	0	0	19	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No			No			No	
Maximum Recall		No		No	No			No			No	
Pedestrian Recall		No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	5	37	37	15	15	15	15	15
g / C, Green / Cycle	0.47	0.47	0.47	0.08	0.62	0.62	0.25	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.32	0.22	0.09	0.02	0.31	0.02	0.05	0.06	0.18	0.01	0.12
s, saturation flow rate [veh/h]	496	3204	1431	1603	3204	1431	1085	1476	2290	1683	1431
c, Capacity [veh/h]	249	1495	668	134	1976	882	350	369	509	421	358
d1, Uniform Delay [s]	23.60	10.98	9.39	25.85	6.41	4.48	19.52	17.93	25.15	16.99	19.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.55	1.09	0.66	5.66	0.93	0.05	0.84	1.50	12.58	0.11	4.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.48	0.20	0.30	0.51	0.03	0.14	0.24	0.80	0.03	0.47
d, Delay for Lane Group [s/veh]	35.15	12.07	10.05	31.51	7.33	4.53	20.36	19.43	37.73	17.10	23.44
Lane Group LOS	D	B	B	C	A	A	C	B	D	B	C
Critical Lane Group	Yes	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.96	2.99	0.99	0.72	2.80	0.10	0.61	1.04	3.61	0.12	2.25
50th-Percentile Queue Length [ft/ln]	74.06	74.64	24.69	17.96	69.95	2.38	15.19	26.06	90.20	3.00	56.21
95th-Percentile Queue Length [veh/ln]	5.33	5.37	1.78	1.29	5.04	0.17	1.09	1.88	6.49	0.22	4.05
95th-Percentile Queue Length [ft/ln]	133.30	134.35	44.45	32.33	125.92	4.29	27.33	46.91	162.36	5.40	101.17

Movement, Approach, & Intersection Results

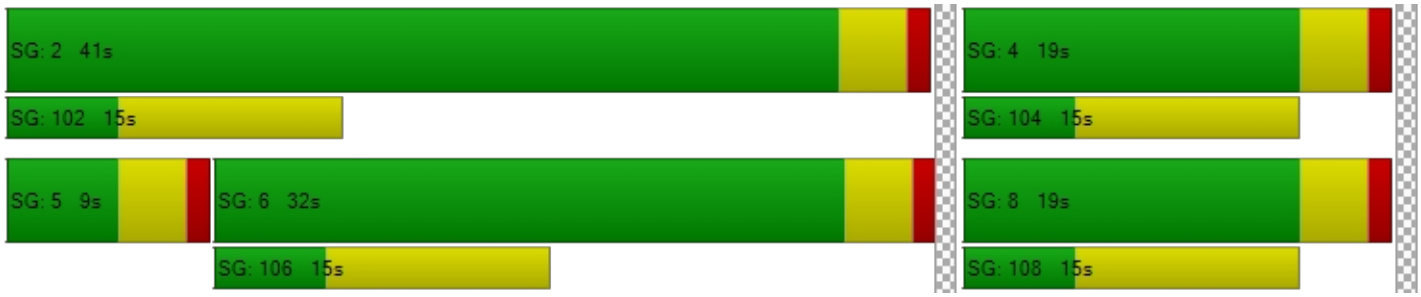
d_M, Delay for Movement [s/veh]	35.15	12.07	10.05	31.51	7.33	4.53	20.36	19.43	19.43	37.73	17.10	23.44
Movement LOS	D	B	B	C	A	A	C	B	B	D	B	C
d_A, Approach Delay [s/veh]	15.43			8.18			19.76			33.27		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	16.63											
Intersection LOS	B											
Intersection V/C	0.519											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	3.417	2.922	2.250	2.432
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	1233	500	500
d_b, Bicycle Delay [s]	8.53	4.41	16.88	16.88
l_b,int, Bicycle LOS Score for Intersection	2.386	2.436	1.784	2.527
Bicycle LOS	B	B	A	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.420

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	287	23	78	109	12	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	23	78	109	12	200
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	6	20	27	3	50
Total Analysis Volume [veh/h]	287	23	78	109	12	200
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.42	0.02	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.02	8.75	0.00	0.00	7.62	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.08	0.07	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	52.08	1.80	0.00	0.00	0.65	0.00
d_A, Approach Delay [s/veh]	13.63		0.00		0.43	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.09					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	22	97	160	74	43	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	97	160	74	43	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	24	40	19	11	4
Total Analysis Volume [veh/h]	22	97	160	74	43	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.09	0.10	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.27	8.87	7.59	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.31	0.35	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.33	7.80	8.63	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.50		5.19		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	19	33	63	37	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	33	63	37	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	8	16	9	0
Total Analysis Volume [veh/h]	0	19	33	63	37	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.52	8.54	7.34	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.06	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.40	1.40	1.61	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.54		2.52		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	154	37	14	0	32	147	246	116	256	9	68	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	37	14	0	32	147	246	116	256	9	68	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	9	4	0	8	37	62	29	64	2	17	0
Total Analysis Volume [veh/h]	154	37	14	0	32	147	246	116	256	9	68	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.00	0.00	0.00	0.00	0.00	0.56	0.24	0.25	0.04	0.17	0.00
d_M, Delay for Movement [s/veh]	7.90	0.00	0.00	7.31	0.00	0.00	23.38	14.75	9.58	22.01	15.59	8.48
Movement LOS	A	A	A	A	A	A	C	B	A	C	C	A
95th-Percentile Queue Length [veh/ln]	0.37	0.00	0.00	0.00	0.00	0.00	3.39	0.93	0.97	0.13	0.59	0.00
95th-Percentile Queue Length [ft/ln]	9.27	0.00	0.00	0.00	0.00	0.00	84.80	23.14	24.19	3.17	14.81	0.00
d_A, Approach Delay [s/veh]	5.93			0.00			16.04			16.34		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	11.48											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	46.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.854

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	105	410	432	710	651	93	107	969	177	244	553	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	410	432	710	651	93	107	969	177	244	553	414
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	103	108	178	163	23	27	242	44	61	138	104
Total Analysis Volume [veh/h]	105	410	432	710	651	93	107	969	177	244	553	414
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	6	5	2	2	3	8	0	7	4	0
Auxiliary Signal Groups			6,7			2,3						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	10	0	5	10	0
Maximum Green [s]	30	30	30	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	38	36	36	32	30	30	13	37	0	15	39	0
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	5	0
Pedestrian Clearance [s]	0	27	27	0	21	21	0	21	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No		No	No	
Maximum Recall	No	No	No	No	No	No	No	No		No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	32	47	28	50	63	9	33	33	11	35	35
g / C, Green / Cycle	0.08	0.27	0.39	0.23	0.42	0.53	0.08	0.27	0.27	0.09	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.07	0.13	0.30	0.23	0.20	0.07	0.07	0.21	0.12	0.08	0.17	0.29
s, saturation flow rate [veh/h]	1603	3204	1431	3113	3204	1431	1603	4584	1431	3113	3204	1431
c, Capacity [veh/h]	129	857	562	726	1348	757	120	1256	392	285	932	416
d1, Uniform Delay [s]	54.31	36.91	31.71	45.69	25.28	14.24	55.01	40.09	36.08	53.71	36.48	42.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.45
I, Upstream Filtering 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
d2, Incremental Delay [s]	11.70	1.91	9.76	11.11	1.24	0.33	18.88	1.03	0.81	7.22	0.61	40.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.82	0.48	0.77	0.98	0.48	0.12	0.89	0.77	0.45	0.85	0.59	1.00
d, Delay for Lane Group [s/veh]	66.01	38.82	41.48	56.80	26.52	14.57	73.89	41.13	36.90	60.94	37.09	83.33
Lane Group LOS	E	D	D	E	C	B	E	D	D	E	D	F
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.54	5.29	12.28	11.55	6.95	1.35	3.84	8.84	4.39	3.91	7.01	16.81
50th-Percentile Queue Length [ft/ln]	88.48	132.30	306.95	288.69	173.74	33.66	95.88	221.09	109.77	97.82	175.26	420.13
95th-Percentile Queue Length [veh/ln]	6.37	9.06	18.02	17.12	11.27	2.42	6.90	13.72	7.83	7.04	11.35	23.53
95th-Percentile Queue Length [ft/ln]	159.26	226.62	450.61	428.01	281.82	60.59	172.59	343.02	195.69	176.07	283.82	588.21

Movement, Approach, & Intersection Results

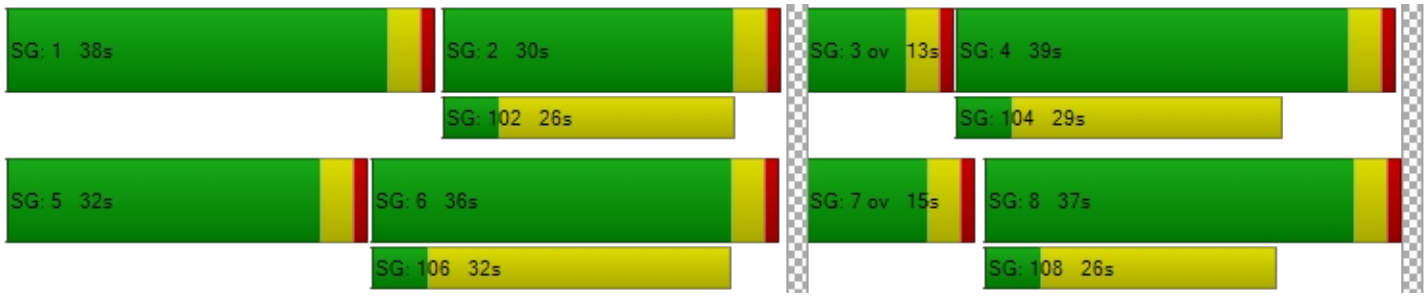
d_M, Delay for Movement [s/veh]	66.01	38.82	41.48	56.80	26.52	14.57	73.89	41.13	36.90	60.94	37.09	83.33
Movement LOS	E	D	D	E	C	B	E	D	D	E	D	F
d_A, Approach Delay [s/veh]	43.05			40.54			43.33			57.70		
Approach LOS	D			D			D			E		
d_I, Intersection Delay [s/veh]	46.02											
Intersection LOS	D											
Intersection V/C	0.854											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	2.796	2.941	2.888	3.224
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	533	433	550	583
d_b, Bicycle Delay [s]	32.27	36.82	31.54	30.11
l_b,int, Bicycle LOS Score for Intersection	2.341	2.759	2.249	2.559
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	250.00	400.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Base Volume Input [veh/h]	159	742	465	140	610	34	47	15	41	287	20	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	742	465	140	610	34	47	15	41	287	20	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	186	116	35	153	9	12	4	10	72	5	29
Total Analysis Volume [veh/h]	159	742	465	140	610	34	47	15	41	287	20	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	1	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	41	0	0	32	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	28	28	28	15	15	15	15	15
g / C, Green / Cycle	0.62	0.62	0.62	0.47	0.47	0.47	0.25	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.33	0.34	0.19	0.02	0.04	0.04	0.12	0.01	0.08
s, saturation flow rate [veh/h]	877	3204	1431	417	3204	1431	1129	1490	2355	1683	1431
c, Capacity [veh/h]	625	1976	882	252	1495	668	354	373	561	421	358
d1, Uniform Delay [s]	5.50	5.74	6.53	20.98	10.54	8.74	19.65	17.53	22.56	17.08	18.35
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	0.55	2.25	8.52	0.83	0.14	0.78	0.85	3.31	0.21	2.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.38	0.53	0.55	0.41	0.05	0.13	0.15	0.51	0.05	0.32
d, Delay for Lane Group [s/veh]	6.48	6.28	8.78	29.50	11.37	8.89	20.43	18.39	25.87	17.29	20.72
Lane Group LOS	A	A	A	C	B	A	C	B	C	B	C
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.79	1.84	2.97	2.39	2.43	0.24	0.58	0.65	2.00	0.22	1.44
50th-Percentile Queue Length [ft/ln]	19.71	46.05	74.15	59.66	60.84	5.90	14.56	16.19	49.99	5.49	35.94
95th-Percentile Queue Length [veh/ln]	1.42	3.32	5.34	4.30	4.38	0.42	1.05	1.17	3.60	0.40	2.59
95th-Percentile Queue Length [ft/ln]	35.49	82.89	133.47	107.38	109.52	10.62	26.21	29.15	89.98	9.88	64.69

Movement, Approach, & Intersection Results

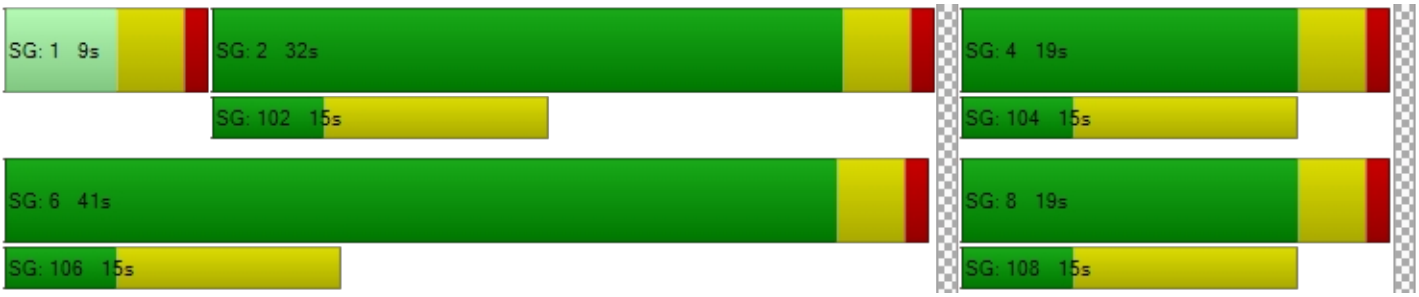
d_M, Delay for Movement [s/veh]	6.48	6.28	8.78	29.50	11.37	8.89	20.43	18.39	18.39	25.87	17.29	20.72
Movement LOS	A	A	A	C	B	A	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	7.16			14.50			19.32			24.06		
Approach LOS	A			B			B			C		
d_I, Intersection Delay [s/veh]	12.44											
Intersection LOS	B											
Intersection V/C	0.458											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	3.216	2.877	2.137	2.683
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1233	933	500	500
d_b, Bicycle Delay [s]	4.41	8.53	16.88	16.88
l_b,int, Bicycle LOS Score for Intersection	2.687	2.206	1.730	2.256
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.324

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	203	2	224	369	5	137
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	2	224	369	5	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	1	56	92	1	34
Total Analysis Volume [veh/h]	203	2	224	369	5	137
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.48	9.43	0.00	0.00	8.68	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.40	0.01	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	35.04	0.18	0.00	0.00	0.38	0.00
d_A, Approach Delay [s/veh]	13.44		0.00		0.31	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.98					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 1: Lorson Bl/Elk Hills Dr.

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.101

Intersection Setup

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	30	0	0	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	30	22	0	89
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	60	22	0	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	15	6	0	67
Total Analysis Volume [veh/h]	66	0	60	22	0	269
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.10	9.24	0.00	0.00	7.38	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.33	0.33	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	8.35	8.35	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.10		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	6	133	74	22	61	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	30	89	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	133	74	52	150	67
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	33	19	13	38	17
Total Analysis Volume [veh/h]	20	133	74	52	150	67
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.15	0.05	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.37	9.96	7.82	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.55	0.17	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.65	13.66	4.34	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.14		4.59		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	4.29					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	29	9	19	56	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	44	132	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	29	9	63	188	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	2	16	47	0
Total Analysis Volume [veh/h]	0	29	9	63	188	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.18	9.36	7.61	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.63	2.63	0.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.36		0.95		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.18					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 14: Lorson Bl/Tin Mountain Trail

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.074

Intersection Setup

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	6	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	22	22	0	66
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	28	22	0	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	7	6	0	17
Total Analysis Volume [veh/h]	66	0	28	22	0	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.35	8.81	0.00	0.00	7.31	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.24	0.24	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.97	5.97	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.35		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.39					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Lorson Bl/Kingston Peak Pl

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	6	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	0	0	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	66	0	0	0	6	22
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	0	0	2	6
Total Analysis Volume [veh/h]	66	0	0	0	6	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.00	0.00	0.00	0.01	0.02
d_M, Delay for Movement [s/veh]	7.31	0.00	0.00	0.00	9.39	8.39
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.02	0.06
95th-Percentile Queue Length [ft/ln]	3.18	3.18	0.00	0.00	0.55	1.55
d_A, Approach Delay [s/veh]	7.31		0.00		8.60	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.70					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	34.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	257	10	4	0	32	233	70	35	70	13	103	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	0	0	0	0	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	300	10	4	0	32	233	70	35	84	13	103	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	3	1	0	8	58	18	9	21	3	26	0
Total Analysis Volume [veh/h]	300	10	4	0	32	233	70	35	84	13	103	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.00	0.00	0.37	0.12	0.08	0.06	0.47	0.00
d_M, Delay for Movement [s/veh]	8.60	0.00	0.00	7.24	0.00	0.00	34.75	18.57	8.76	23.88	34.69	8.36
Movement LOS	A	A	A	A	A	A	D	C	A	C	D	A
95th-Percentile Queue Length [veh/ln]	0.89	0.00	0.00	0.00	0.00	0.00	1.59	0.39	0.26	0.20	2.27	0.00
95th-Percentile Queue Length [ft/ln]	22.36	0.00	0.00	0.00	0.00	0.00	39.75	9.78	6.56	5.07	56.63	0.00
d_A, Approach Delay [s/veh]	8.22			0.00			20.20			33.48		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	11.63											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	42.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.344

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	3
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	216.40
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	73	625	145	193	300	55	75	289	132	268	726	553
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	80	50	0	6	17	0	0	9	26	0	27	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	153	675	145	199	317	55	75	298	158	268	753	570
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	169	36	50	79	14	19	75	40	67	188	143
Total Analysis Volume [veh/h]	153	675	145	199	317	55	75	298	158	268	753	570
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla
Signal Group	1	6	6	5	2	2	3	8	8	7	4	4
Auxiliary Signal Groups			6,7			2,3			1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	10	10	5	10	10
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	19	40	40	12	33	33	10	30	30	28	48	48
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	5	0	5	5
Pedestrian Clearance [s]	0	31	31	0	24	24	0	21	21	0	24	24
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	12	50	66	8	45	55	6	24	41	12	30	42
g / C, Green / Cycle	0.11	0.45	0.60	0.07	0.41	0.50	0.05	0.22	0.37	0.11	0.28	0.38
(v / s)_i Volume / Saturation Flow Rate	0.10	0.21	0.10	0.06	0.10	0.04	0.05	0.07	0.11	0.09	0.23	0.40
s, saturation flow rate [veh/h]	1603	3204	1431	3113	3204	1431	1603	4584	1431	3113	3204	1431
c, Capacity [veh/h]	182	1443	856	229	1315	718	89	1006	528	347	883	551
d1, Uniform Delay [s]	47.83	21.06	9.89	50.49	21.24	14.20	51.54	35.88	24.62	47.56	37.78	33.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.47
I, Upstream Filtering 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
d2, Incremental Delay [s]	9.92	1.09	0.43	9.79	0.43	0.21	18.86	0.16	0.31	3.68	2.47	46.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.84	0.47	0.17	0.87	0.24	0.08	0.85	0.30	0.30	0.77	0.85	1.03
d, Delay for Lane Group [s/veh]	57.75	22.16	10.32	60.28	21.68	14.41	70.40	36.04	24.94	51.23	40.24	80.01
Lane Group LOS	E	C	B	E	C	B	E	D	C	D	D	F
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.60	6.16	1.62	3.02	2.74	0.75	2.51	2.24	2.96	3.74	9.79	21.34
50th-Percentile Queue Length [ft/ln]	114.98	153.95	40.40	75.41	68.46	18.66	62.78	56.12	74.04	93.46	244.63	533.55
95th-Percentile Queue Length [veh/ln]	8.12	10.23	2.91	5.43	4.93	1.34	4.52	4.04	5.33	6.73	14.92	29.62
95th-Percentile Queue Length [ft/ln]	202.91	255.69	72.71	135.73	123.23	33.59	113.00	101.01	133.27	168.23	372.89	740.40

Movement, Approach, & Intersection Results

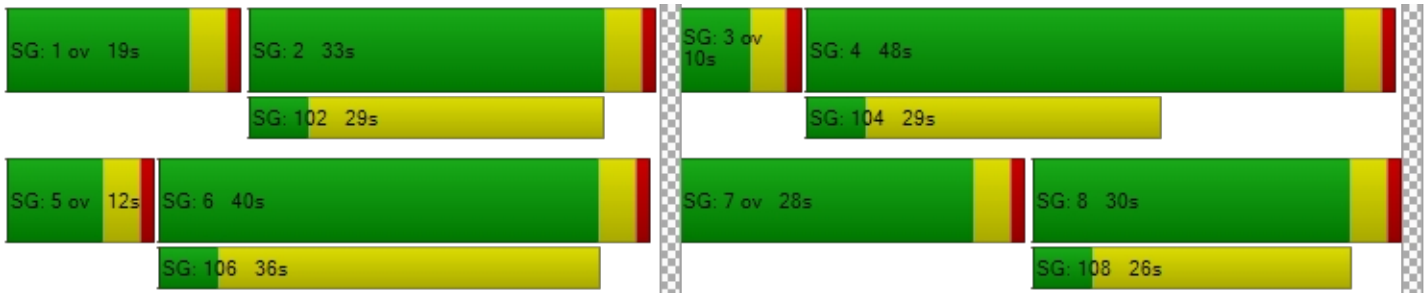
d_M, Delay for Movement [s/veh]	57.75	22.16	10.32	60.28	21.68	14.41	70.40	36.04	24.94	51.23	40.24	80.01
Movement LOS	E	C	B	E	C	B	E	D	C	D	D	F
d_A, Approach Delay [s/veh]	25.99			34.43			37.59			56.34		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	42.16											
Intersection LOS	D											
Intersection V/C	0.344											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.39	46.39	46.39	46.39
l_p,int, Pedestrian LOS Score for Intersection	2.743	2.868	2.813	3.102
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	654	527	473	800
d_b, Bicycle Delay [s]	24.91	29.85	32.10	19.82
l_b,int, Bicycle LOS Score for Intersection	2.362	2.031	1.852	2.872
Bicycle LOS	B	B	A	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	250.00	400.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Base Volume Input [veh/h]	157	714	131	40	999	23	49	18	69	408	11	167
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	31	43	0	0	0	0	0	92	0	129
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	714	162	83	999	23	49	18	69	500	11	296
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	179	41	21	250	6	12	5	17	125	3	74
Total Analysis Volume [veh/h]	157	714	162	83	999	23	49	18	69	500	11	296
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	32	0	9	41	0	0	19	0	0	19	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No			No			No	
Maximum Recall		No		No	No			No			No	
Pedestrian Recall		No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	28	28	28	5	37	37	15	15	15	15	15
g / C, Green / Cycle	0.47	0.47	0.47	0.08	0.62	0.62	0.25	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.32	0.22	0.11	0.05	0.31	0.02	0.05	0.06	0.22	0.01	0.21
s, saturation flow rate [veh/h]	496	3204	1431	1603	3204	1431	965	1476	2290	1683	1431
c, Capacity [veh/h]	249	1495	668	134	1976	882	324	369	509	421	358
d1, Uniform Delay [s]	23.60	10.98	9.62	26.58	6.41	4.48	19.64	17.93	26.04	16.99	21.28
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.55	1.09	0.86	19.81	0.93	0.05	0.99	1.50	35.97	0.11	19.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.48	0.24	0.62	0.51	0.03	0.15	0.24	0.98	0.03	0.83
d, Delay for Lane Group [s/veh]	35.15	12.07	10.48	46.40	7.33	4.53	20.62	19.43	62.01	17.10	40.62
Lane Group LOS	D	B	B	D	A	A	C	B	E	B	D
Critical Lane Group	Yes	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.96	2.99	1.26	1.82	2.80	0.10	0.62	1.04	5.99	0.12	5.51
50th-Percentile Queue Length [ft/ln]	74.06	74.64	31.42	45.50	69.95	2.38	15.45	26.06	149.65	3.00	137.77
95th-Percentile Queue Length [veh/ln]	5.33	5.37	2.26	3.28	5.04	0.17	1.11	1.88	10.00	0.22	9.36
95th-Percentile Queue Length [ft/ln]	133.30	134.35	56.56	81.90	125.92	4.29	27.81	46.91	249.97	5.40	234.02

Movement, Approach, & Intersection Results

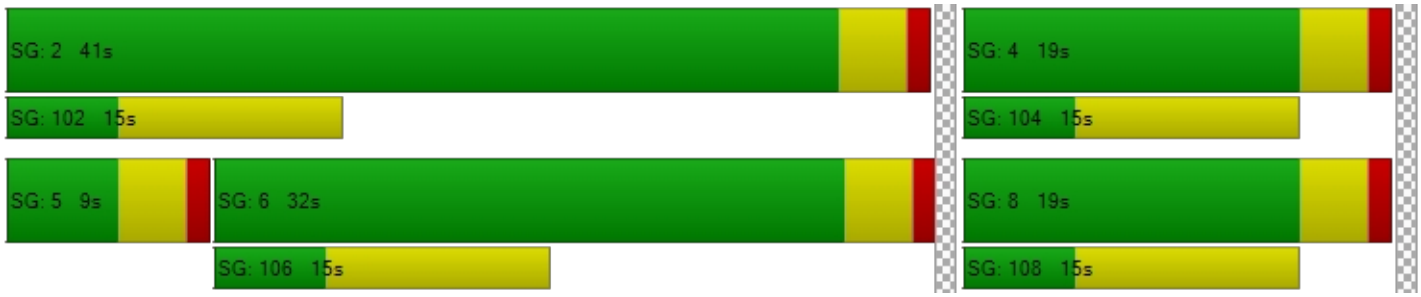
d_M, Delay for Movement [s/veh]	35.15	12.07	10.48	46.40	7.33	4.53	20.62	19.43	19.43	62.01	17.10	40.62
Movement LOS	D	B	B	D	A	A	C	B	B	E	B	D
d_A, Approach Delay [s/veh]	15.33			10.21			19.86			53.56		
Approach LOS	B			B			B			D		
d_I, Intersection Delay [s/veh]	23.71											
Intersection LOS	C											
Intersection V/C	0.586											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	3.567	2.946	2.250	2.489
Crosswalk LOS	D	C	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	1233	500	500
d_b, Bicycle Delay [s]	8.53	4.41	16.88	16.88
l_b,int, Bicycle LOS Score for Intersection	2.412	2.471	1.784	2.891
Bicycle LOS	B	B	A	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.680

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	287	23	78	109	12	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	52	22	0	155
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	353	23	130	131	12	355
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	6	33	33	3	89
Total Analysis Volume [veh/h]	353	23	130	131	12	355
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.68	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	25.40	9.01	0.00	0.00	7.79	0.00
Movement LOS	D	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	5.11	0.08	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	127.84	1.92	0.00	0.00	0.70	0.00
d_A, Approach Delay [s/veh]	24.40		0.00		0.25	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	9.23					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 1: Lorson Bl/Elk Hills Dr.

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Elk Hills Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	66	0	136	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	100	74	0	59
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	166	74	136	59
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	42	19	34	15
Total Analysis Volume [veh/h]	43	0	166	74	136	59
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.00	0.00	0.00	0.10	0.00
d_M, Delay for Movement [s/veh]	13.74	10.12	0.00	0.00	8.02	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.00	0.00	0.34	0.00
95th-Percentile Queue Length [ft/ln]	7.78	7.78	0.00	0.00	8.55	0.00
d_A, Approach Delay [s/veh]	13.74		0.00		5.60	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.52					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Lorson Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.169

Intersection Setup

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Walleye Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	22	97	160	74	43	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	48	0	0	100	59	28
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	97	160	174	102	42
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	24	40	44	26	11
Total Analysis Volume [veh/h]	70	97	160	174	102	42
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.10	0.11	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.44	9.20	7.82	0.00	0.00	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.60	0.34	0.37	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.03	8.47	9.36	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.82		3.74		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	5.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 10: Lorson Bl/Split Mountain Dr

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Split Mountain Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	19	33	63	37	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	148	87	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	33	211	124	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	8	53	31	0
Total Analysis Volume [veh/h]	0	19	33	211	124	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.17	8.97	7.52	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.06	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.57	1.57	1.73	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.97		1.02		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.08					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 14: Lorson Bl/Tin Mountain Trail

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Tin Mountain Trail		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	74	74	0	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	74	74	0	43
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	19	19	0	11
Total Analysis Volume [veh/h]	43	0	74	74	0	43
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.53	9.05	0.00	0.00	7.51	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.05	4.05	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.53		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.75					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Lorson Bl/Kingston Peak Pl

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

Intersection Setup

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Kingston Peak Pl		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	0	0	0	74
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	0	0	0	0	74
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	0	0	0	0	19
Total Analysis Volume [veh/h]	43	0	0	0	0	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	7.28	0.00	0.00	0.00	9.04	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.22
95th-Percentile Queue Length [ft/ln]	2.04	2.04	0.00	0.00	0.00	5.48
d_A, Approach Delay [s/veh]	7.28		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.09					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 26: Fontaine Bl/Walleye Dr

Control Type:	Two-way stop	Delay (sec / veh):	29.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Walleye Dr			Walley Dr			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	154	37	14	0	32	147	246	116	256	9	68	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	0	0	0	0	0	0	48	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	182	37	14	0	32	147	246	116	304	9	68	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	9	4	0	8	37	62	29	76	2	17	0
Total Analysis Volume [veh/h]	182	37	14	0	32	147	246	116	304	9	68	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.00	0.00	0.00	0.63	0.26	0.29	0.05	0.18	0.00
d_M, Delay for Movement [s/veh]	7.96	0.00	0.00	7.31	0.00	0.00	28.97	16.07	9.87	26.54	16.90	8.48
Movement LOS	A	A	A	A	A	A	D	C	A	D	C	A
95th-Percentile Queue Length [veh/ln]	0.45	0.00	0.00	0.00	0.00	0.00	4.19	1.05	1.22	0.16	0.66	0.00
95th-Percentile Queue Length [ft/ln]	11.20	0.00	0.00	0.00	0.00	0.00	104.87	26.14	30.50	4.01	16.58	0.00
d_A, Approach Delay [s/veh]	6.22			0.00			18.01			18.03		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	12.84											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 31: Marksheffel Road/Fontaine Blvd

Control Type:	Signalized	Delay (sec / veh):	46.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	460.00	100.00	460.00	390.00	100.00	390.00	260.00	100.00	40.00	430.00	100.00	430.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	2
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd			Fontaine Bl			Fontaine Bl		
Base Volume Input [veh/h]	105	410	432	710	651	93	107	969	177	244	553	414
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	32	0	19	56	0	0	30	89	0	17	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	442	432	729	707	93	107	999	266	244	570	425
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	111	108	182	177	23	27	250	67	61	143	106
Total Analysis Volume [veh/h]	157	442	432	729	707	93	107	999	266	244	570	425
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla	Protect	Permis	Overla
Signal Group	1	6	6	5	2	2	3	8	8	7	4	4
Auxiliary Signal Groups			6,7			2,3			1,8			4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	10	5	10	10	5	10	10	5	10	10
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	40	40	40	33	33	33	14	41	41	16	43	43
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	5	0	5	5
Pedestrian Clearance [s]	0	31	31	0	24	24	0	21	21	0	24	24
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	20	41	57	29	50	64	10	32	56	12	34	67
g / C, Green / Cycle	0.15	0.31	0.44	0.22	0.38	0.49	0.08	0.25	0.43	0.09	0.26	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.30	0.23	0.22	0.07	0.07	0.22	0.19	0.08	0.18	0.30
s, saturation flow rate [veh/h]	1603	3204	1431	3113	3204	1431	1603	4584	1431	3113	3204	1431
c, Capacity [veh/h]	246	1008	627	694	1231	704	124	1130	616	289	839	737
d1, Uniform Delay [s]	51.63	35.42	29.39	50.51	31.64	17.92	59.28	47.21	25.88	58.05	43.10	21.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.21	0.11	0.11	0.46
I, Upstream Filtering 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
d2, Incremental Delay [s]	2.73	1.39	6.10	31.00	1.95	0.39	15.56	2.51	0.95	6.67	0.98	2.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

Lane Group Results

X, volume / capacity	0.64	0.44	0.69	1.05	0.57	0.13	0.86	0.88	0.43	0.84	0.68	0.58
d, Delay for Lane Group [s/veh]	54.37	36.81	35.49	81.51	33.59	18.30	74.85	49.72	26.83	64.72	44.08	24.70
Lane Group LOS	D	D	D	F	C	B	E	D	C	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.01	5.80	11.84	14.24	9.11	1.61	4.03	10.62	5.94	4.22	8.35	9.44
50th-Percentile Queue Length [ft/ln]	125.20	145.02	296.02	355.96	227.72	40.31	100.68	265.44	148.46	105.60	208.80	235.96
95th-Percentile Queue Length [veh/ln]	8.68	9.75	17.48	20.98	14.06	2.90	7.25	15.96	9.93	7.59	13.09	14.48
95th-Percentile Queue Length [ft/ln]	216.95	243.77	437.10	524.59	351.47	72.56	181.23	399.03	248.37	189.87	327.29	361.92

Movement, Approach, & Intersection Results

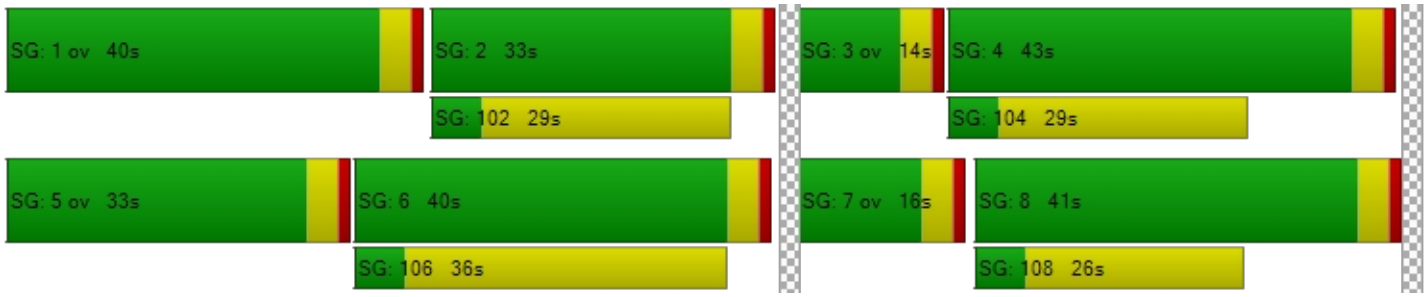
d_M, Delay for Movement [s/veh]	54.37	36.81	35.49	81.51	33.59	18.30	74.85	49.72	26.83	64.72	44.08	24.70
Movement LOS	D	D	D	F	C	B	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	38.93			55.51			47.25			41.50		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	46.65											
Intersection LOS	D											
Intersection V/C	0.800											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.32	56.32	56.32	56.32
l_p,int, Pedestrian LOS Score for Intersection	2.837	2.961	2.918	3.236
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	554	446	569	600
d_b, Bicycle Delay [s]	33.99	39.24	33.27	31.86
l_b,int, Bicycle LOS Score for Intersection	2.410	2.821	2.314	2.582
Bicycle LOS	B	C	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 36: Marksheffel Rd/Lorson Bl

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	250.00	400.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Marksheffel Rd			Marksheffel Rd						Lorson Bl		
Base Volume Input [veh/h]	159	742	465	140	610	34	47	15	41	287	20	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	103	144	0	0	0	0	0	61	0	84
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	742	568	284	610	34	47	15	41	348	20	199
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	186	142	71	153	9	12	4	10	87	5	50
Total Analysis Volume [veh/h]	159	742	568	284	610	34	47	15	41	348	20	199
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	1	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	9	41	0	0	32	0	0	19	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	37	37	37	28	28	28	15	15	15	15	15
g / C, Green / Cycle	0.62	0.62	0.62	0.47	0.47	0.47	0.25	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.40	0.75	0.19	0.02	0.04	0.04	0.15	0.01	0.14
s, saturation flow rate [veh/h]	877	3204	1431	378	3204	1431	1046	1490	2355	1683	1431
c, Capacity [veh/h]	625	1976	882	240	1495	668	337	373	561	421	358
d1, Uniform Delay [s]	5.50	5.74	7.31	25.23	10.54	8.74	19.72	17.53	23.25	17.08	19.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	0.55	3.61	116.61	0.83	0.14	0.86	0.85	5.08	0.21	6.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.38	0.64	1.18	0.41	0.05	0.14	0.15	0.62	0.05	0.56
d, Delay for Lane Group [s/veh]	6.48	6.28	10.92	141.84	11.37	8.89	20.58	18.39	28.33	17.29	25.73
Lane Group LOS	A	A	B	F	B	A	C	B	C	B	C
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.79	1.84	4.19	11.08	2.43	0.24	0.59	0.65	2.57	0.22	2.83
50th-Percentile Queue Length [ft/ln]	19.71	46.05	104.64	277.11	60.84	5.90	14.72	16.19	64.31	5.49	70.78
95th-Percentile Queue Length [veh/ln]	1.42	3.32	7.53	18.33	4.38	0.42	1.06	1.17	4.63	0.40	5.10
95th-Percentile Queue Length [ft/ln]	35.49	82.89	188.35	458.24	109.52	10.62	26.49	29.15	115.76	9.88	127.41

Movement, Approach, & Intersection Results

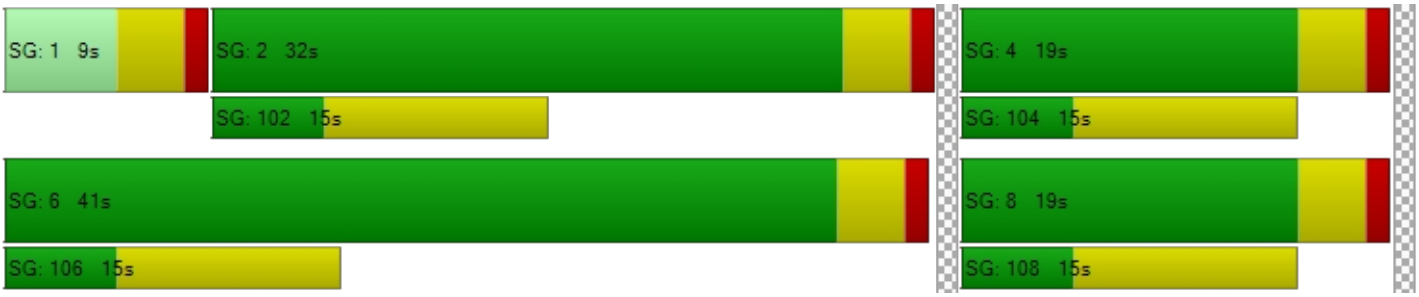
d_M, Delay for Movement [s/veh]	6.48	6.28	10.92	141.84	11.37	8.89	20.58	18.39	18.39	28.33	17.29	25.73
Movement LOS	A	A	B	F	B	A	C	B	B	C	B	C
d_A, Approach Delay [s/veh]	8.10			51.20			19.39			27.03		
Approach LOS	A			D			B			C		
d_I, Intersection Delay [s/veh]	25.02											
Intersection LOS	C											
Intersection V/C	0.900											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	3.330	2.908	2.137	2.964
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1233	933	500	500
d_b, Bicycle Delay [s]	4.41	8.53	16.88	16.88
l_b,int, Bicycle LOS Score for Intersection	2.772	2.325	1.730	2.495
Bicycle LOS	C	B	A	B

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 38: Lorson Bl/Trappe Dr

Control Type:	Two-way stop	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Trappe Dr		Lorson Bl		Lorson Bl	
Base Volume Input [veh/h]	203	2	224	369	5	137
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	0	173	74	0	102
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	246	2	397	443	5	239
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	1	99	111	1	60
Total Analysis Volume [veh/h]	246	2	397	443	5	239
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.57	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	23.66	10.53	0.00	0.00	9.56	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	3.44	0.01	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	85.88	0.23	0.00	0.00	0.47	0.00
d_A, Approach Delay [s/veh]	23.56		0.00		0.20	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.42					
Intersection LOS	C					

Table 3
Signal Escrow Analysis Table
Old Glory/Fontaine Intersection
The Ridge at Lorson Ranch

Development	Minor Approach Volume[(1)] AM	Minor Approach Volume[(1)] PM	Fair Share All Traffic	Fair Share Future Development Only	Amount (Based on a $300,000 signal cost)
Based on Projected 2040 Total Traffic Volumes					
Existing Traffic	166	56	42.2%	- - -	
Creekside at Lorson Ranch (platted)	19	14	6.3%	- - -	
Lorson Ranch East Fil 4	19	15	6.5%	- - -	
Creekside South at Lorson Ranch	45	33	14.8%	32.9%	$98,734
Ponderosa at Lorson Ranch Fil 3	6	3	1.7%	3.8%	$11,392
The Hills at Lorson Ranch	8	5	2.5%	5.5%	$16,456
Future Multi-family SW Lorson/Trappe	13	8	4.0%	8.9%	$26,582
Ridge at Lorson Ranch - Fil 1 (535 lots)	7	5	2.3%	5.1%	$8,176
Ridge at Lorson Ranch - Fil 2 (277 lots)					$4,233
Ridge at Lorson Ranch - Fil 3 (182 lots)					$2,781
Future Development East of Powerline Easement	60	44	19.8%	43.9%	$131,646
	343	**183**			**$300,000**

Notes:

(1) Minor approach volume includes all northbound and southbound left-turn and through movements. Right-turn movements have been excluded as there are existing dedicated right-turn lanes on both approaches.

Source: LSC Transportation Consultants, Inc. *Mar-22*

Break this out by subdivision names