

Laurel Street Intersection Study Fayetteville, West Virginia



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Table of Contents

1.0	Executive Summary.....	1
2.0	Purpose and Location.....	1
3.0	Existing Conditions.....	5
	US 19 and Laurel Street.....	5
	Maple Avenue and Laurel Street	5
4.0	Data Collection	5
	Background Traffic Growth.....	5
5.0	Future Volumes	6
	No-Build Volumes.....	6
	Trip Generation	6
	Primary Site Distribution and Assignment.....	7
	Build Volumes	8
6.0	Operational Analysis	18
	No-Build Analysis.....	18
	Build Analysis	21
	Turn Lane Lengths	23
7.0	Conclusions	28

List of Figures

Figure 1: Site Location Map	3
Figure 2: Site Plan.....	4
Figure 3: Existing Volumes	9
Figure 4: 2029 & 2034 No-Build Volume	10
Figure 5: 2044 No-Build Volume	11
Figure 6: 2029 Directional Distribution.....	12
Figure 7: 2034 Directional Distribution.....	13
Figure 8: 2044 Directional Distribution.....	14
Figure 9: 2029 Site Trips & Build Volume.....	15
Figure 10: 2034 Site Trips & Build Volume	16
Figure 11: 2044 Site Trips & Build Volume	17

List of Tables

Table 1: Phase 1 & 2 Site Trip Summary	6
Table 2: Phase 3 Site Trip Summary	7
Table 3: Phase 4 & 5 Site Trip Summary	7
Table 4: LOS Criteria.....	18
Table 5: AM No-Build Analysis Results	19
Table 6: PM No-Build Analysis Results	20
Table 7: 2029 AM Build Analysis Results.....	21
Table 8: 2029 PM Build Analysis Results	22
Table 9: 2034 AM Build Analysis Results.....	24
Table 10: 2034 PM Build Analysis Results	25
Table 11: 2044 AM Build Analysis Results	26
Table 12: 2044 PM Build Analysis Results	27

Appendices

Appendix A – Raw Traffic Counts

Appendix B – HCS Output

1.0 Executive Summary

Burgess & Niple (B&N) has conducted an intersection study for two intersections: US 19 & Laurel Street and Maple Avenue & Laurel Street for the proposed Cascade Village development located east of Maple Avenue and adjacent to the Fayetteville PK-8 School. The purpose of this study is to evaluate the traffic conditions at the subject intersections for the 2029 opening and 2034 and 2044 future years to determine what roadway improvements, if any, are needed to accommodate the projected traffic volumes.

The proposed site, located in the east quadrant of the Maple Avenue & Laurel Street intersection currently consists of a mix of forest and field. Access to the development will be from a newly constructed portion of Laurel Street, and the development is projected to be built in five phases. Phases 1 and 2 are projected to be completed by 2029, Phase 3 built by 2034, and Phases 4 and 5 completed by 2044. Phases 1 and 2 include single family and multifamily housing. Phase 3 includes multifamily housing and 72,000 square feet of mixed office and retail space and phases 4 and 5 will include more multifamily housing and 72,000 square feet of mixed office and retail space.

The following traffic scenarios were analyzed based on discussion with Fayette-Raleigh MPO:

- No-Build Condition
- Build 1 Condition (addition of site trips and no change to roadway geometry)
- Build 2 Condition (addition of site trips and changes to roadway geometry)

Based on the operational analysis, the additional traffic volumes created by the proposed Cascade Village development will have an impact on the intersections of US 19 & Laurel Street and Maple Avenue & Laurel Street. US 19 & Laurel Street will require the southbound left turn storage length to be increased to 150 feet to maintain acceptable LOS for the intersection. At Maple Avenue & Laurel Street the two-way stop-control will need to change to all-way stop control in 2034. In 2044 a 225 foot westbound right-turn lane will need to be added to maintain acceptable LOS.

2.0 Purpose and Location

The purpose of this study is to perform an intersection study at US 19 & Laurel Street and Maple Avenue & Laurel Street, estimate the trip generation potential of the Cascade Village development, and determine what roadway improvements, if any, are needed to accommodate the projected traffic volumes. The study area is shown in **Figure 1**.

Maple Avenue and US 19 are parallel routes running through Fayetteville, WV. US 19 is classified as a Principal Arterial running North-South through the City of Fayetteville. Maple Avenue is classified as a collector connecting downtown and the neighborhoods to the south. Laurel Street is a collector connecting Maple Street and US 19. Laurel Street changes to Laurel Creek Road west of US 19 and east of Maple Avenue. The intersection at US 19 is signalized and the Maple Avenue intersection is two-way stop controlled with stop signs on the Laurel Street approaches.

The proposed Cascade Village development is located in the east quadrant of the Maple Avenue & Laurel Street intersection. Currently, the east leg (Laurel Creek Road) of the intersection at Maple Avenue is only used to access the Fayetteville PK-8 school. During phase 1 of the proposed development a public road will be constructed using the east leg of Maple Avenue intersection giving access to the Cascade Village development and the Fayetteville PK-8 school. The site is currently undeveloped and is a mix of forest and field. The site plan is shown in **Figure 2**.

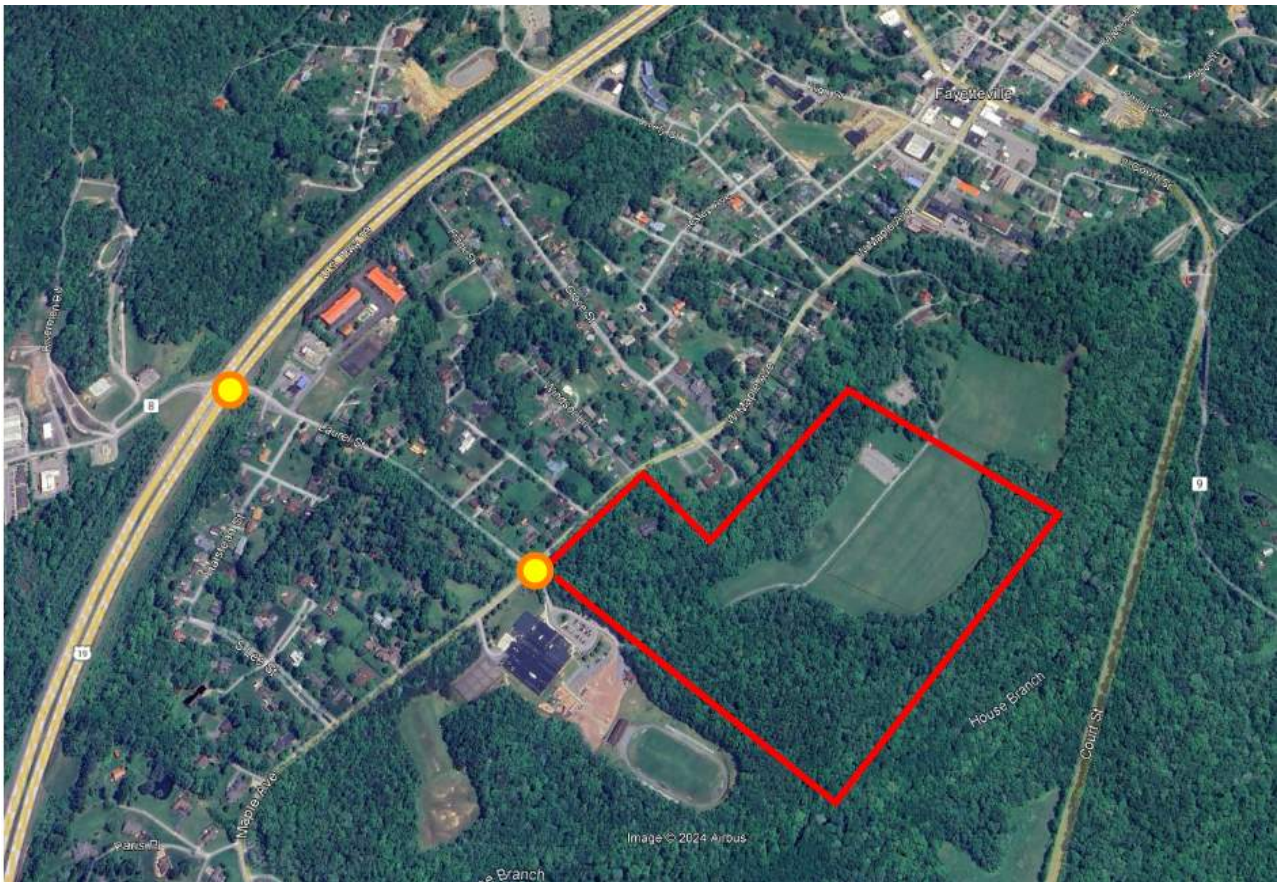
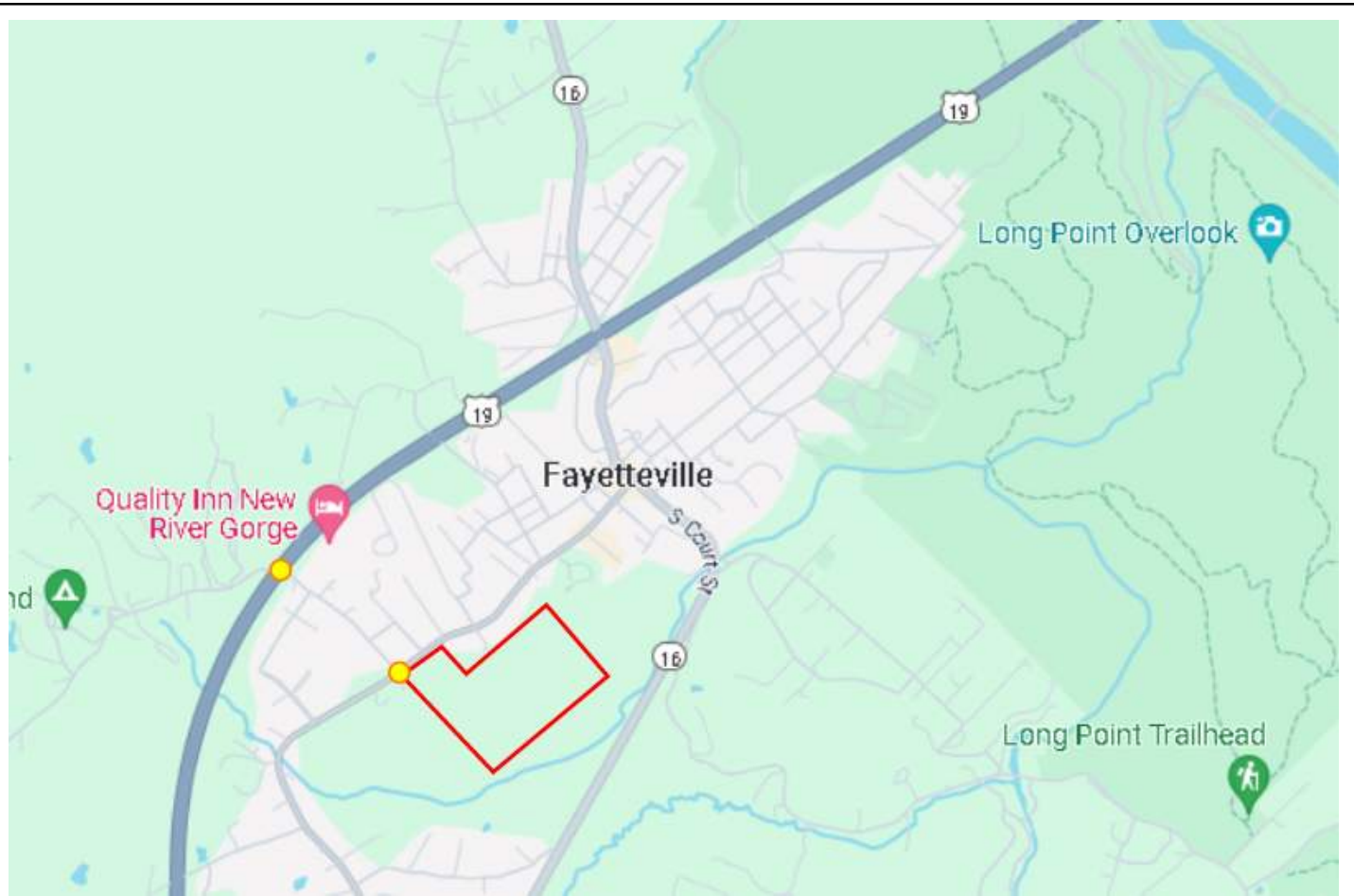


FIGURE 1

**LAUREL STREET INTERSECTION STUDY
SITE LOCATION & STUDY INTERSECTIONS**

NOT TO SCALE



THE GAINES ESTATE

Conceptual Master Plan



- Key:**
1. Parking Lot (83 spaces)
 2. Multi-Family Residential Area
 3. Parking Lot (65 spaces)
 4. Entrance Roundabout
 5. Multi-Family Residential Area
 6. Parking Lot (136 spaces)
 7. Parking Lot (350 spaces)
 8. Pedestrian Plaza / Green Space
 9. Parking Lot (411 spaces)
 10. Clubhouse and Pool Area
 11. WV 16 Connector Road
 12. Single Family Residential lots
 13. Trail system
 14. Proposed School Loop Road

ANALYST: KB
DATE: 07/24

NOT TO SCALE

THE GAINES ESTATE
Fayetteville, West Virginia

3.0 Existing Conditions

US 19 is a four-lane divided highway with a posted speed limit of 50 miles per hour (mph) and an annual average daily traffic (AADT) volume of approximately 20,800 vehicles per day (vpd) from the WVDOT AADT Map

Maple Avenue is a two-lane collector with a posted speed limit of 30 mph and an AADT of approximately 1300 vpd.

Laurel Street is a two-lane collector with a posted speed limit of 30 mph and an AADT of approximately 550 vpd based on WVDOT AADT map. West of US 19 the road is called Laurel Creek Road.

US 19 and Laurel Street

This intersection is a four-legged, signalized intersection. The north and south approaches (US 19) are two through lanes plus left- and right-turn lanes. The east and west (Laurel Street and Laurel Creek Road, respectively) approaches are single lane approaches.

Maple Avenue and Laurel Street

This intersection is a four-legged, stop-controlled intersection with stop signs on Laurel Street approaches only. All four approaches are single lanes, and the southeast leg provides access to Fayetteville PK-8 school.

4.0 Data Collection

Traffic volume counts were completed on Thursday, April 25, 2024, at the intersections of US 19 & Laurel Street and Maple Avenue & Laurel Street. Video from each intersection was collected and processed from 6:00am to 7:00pm using Miovision. The collective AM peak hour for both intersections is from 7:45-8:45 AM and the PM peak hour is from 3:15-4:15 PM. Based on school start/stop times, the AM peak period sees higher volumes than the PM peak period at the Maple Avenue & Laurel Street intersection. The existing traffic counts are illustrated in **Figure 3**. Raw traffic counts are summarized in **Appendix A**.

Background Traffic Growth

The opening date for the Cascade Village development is 2029. The future years used for the analysis are 2034 and 2044. Using the 2018 and 2045 Fayette-Raleigh MPO travel demand models, the linear growth rate on US 19 was determined to be 0.6% annually. This growth rate was applied to all volumes on US 19, Laurel Street, Laurel Creek Road, and Maple Avenue to determine the opening and future year volumes.

5.0 Future Volumes

No-Build Volumes

The no-build volumes are used to analyze current road geometry with no added Cascade Village development trips. No-build volumes were developed using the 0.6% linear growth rate. **Figures 4 & 5** shows no build volumes for 2029 opening and 2034 and 2044 future years.

Trip Generation

The proposed Cascade Village development will be built in five phases. For this study, the background traffic growth will be evaluated in three phases. Phases 1 and 2 will be evaluated with the 2029 opening year volume, Phase 3 will be evaluated with the 2034 future year volumes. Phases 4 and 5 will be evaluated with the 2044 future year volume.

To obtain the development trips, the *ITE Trip Generation Manual 11th Edition* was used. For Phases 1 and 2, land use codes (L.U.C) 210: Single Family Detached Housing and 220: Multifamily Housing (Low-Rise) were used. The number of trips for Phases 1 and 2 are based on the number of housing units. The Phase 1 and 2 site trips are summarized in **Table 1** below.

Table 1: Phase 1 and 2 Site Trip Summary

	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
6 units Single Family Detached Housing (ITE L.U.C. 210)	1	4	5	5	3	8
48 units Multifamily Housing (Low-Rise) (ITE L.U.C. 220)	9	29	38	30	18	48
Total Site Trips	10	33	43	35	21	56

For Phase 3, L.U.C 220: Multifamily Housing (Low-Rise), 710: General Office Building, and 822: Retail Plaza were used. The number of trips for Phase 3 are dependent upon the number of housing units and every 1,000 square feet of office and retail area. Internal trips are trips with both its origin and destination within the development and will not impact any road networks outside of the development. Internal trips were determined using NCHRP Report 684 Internal Trips Estimator worksheet. The internal trips were removed from the site generated trips. The Phase 3 site trips are summarized in **Table 2**.

Table 2: Phase 3 Site Trip Summary

	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
96 units Multifamily Housing (Low-Rise) (ITE L.U.C. 220)	13	40	53	39	23	62
36,000 sqft General Office Building (ITE L.U.C. 710)	61	8	69	12	59	71
36,000 sqft Retail Plaza (ITE L.U.C. 822)	40	27	67	97	97	194
Internal Trips Removed	-5	-6	-11	-48	-48	-96
Total Site Trips	109	69	178	100	131	231

For Phases 4 and 5, L.U.C 220: Multifamily Housing (Low-Rise), 710: General Office Building, and 822: Retail Plaza were used. The number of trips for Phases 4 and 5 are based on number of housing units and every 1,000 square feet of office and retail area. Internal trips were determined using NCHRP Report 684 Internal Trips Estimator worksheet. The internal trips were removed from the site generated trips. The Phase 4 & 5 site trips are summarized in **Table 3**.

Table 3: Phase 4 and 5 Site Trip Summary

	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
234 units Multifamily Housing (Low-Rise) (ITE L.U.C. 220)	28	90	118	89	52	141
36,000 sqft General Office Building (ITE L.U.C. 710)	61	8	69	12	59	71
36,000 sqft Retail Plaza (ITE L.U.C. 822)	40	27	67	97	97	194
Internal Trips Removed	-9	-11	-20	-47	-46	-93
Total Site Trips	120	114	234	151	162	313

Primary Site Distribution and Assignment

The site trip directional distribution for Cascade Village follows existing traffic volumes. Entering and exiting trips were divided proportionally between all turn movements. The number of trips are rounded and not every movement is initially assigned trips. With each stage of development, the number of trips increases and will be assigned to the corresponding turning movements at both intersections. **Figures 6 through 8** show the AM and PM primary site distribution for 2029 opening year and 2034 and 2044 future years.

Build Volumes

The primary site trips were combined with the No-Build trips to estimate the build volumes. By 2044 the number of trips generated by Cascade Village development will double the forecasted No-Build volume. **Figures 9 through 11** show the added primary site trips and total build volumes for 2029 opening year and 2034 and 2044 future years.

EXISTING VOLUMES

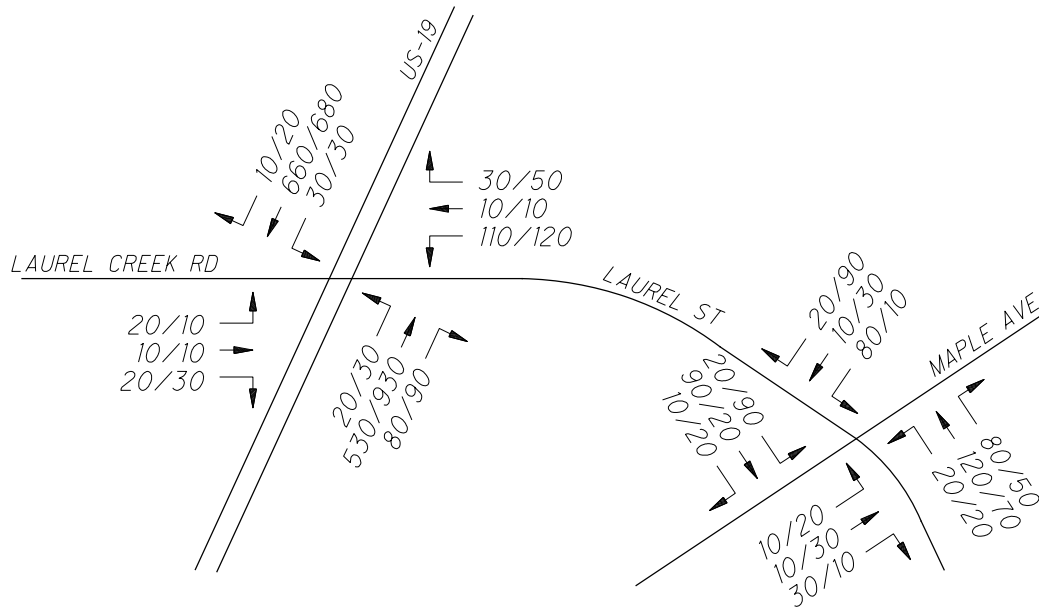


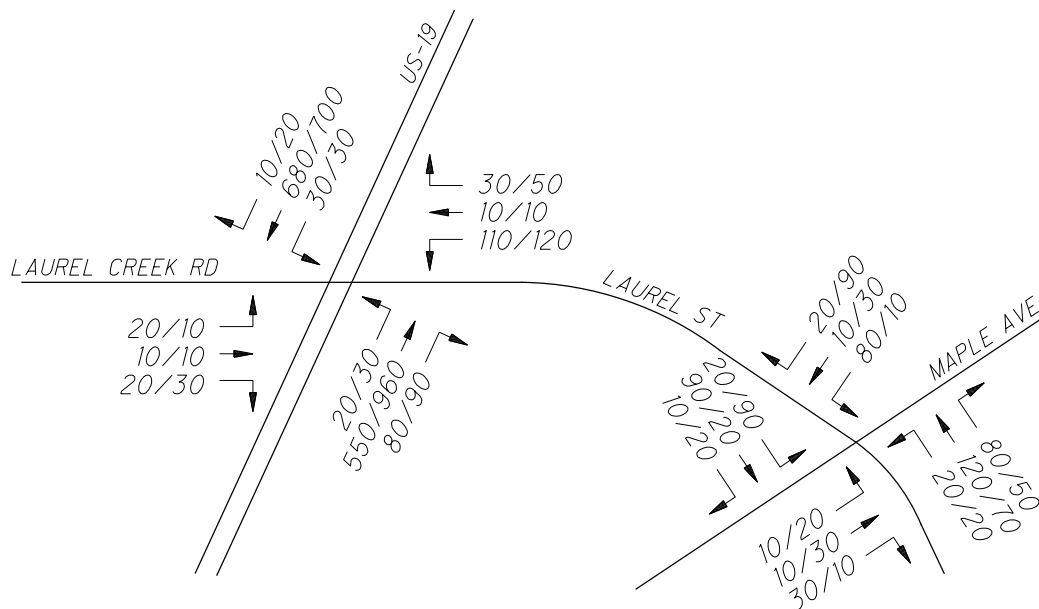
FIGURE 3

**LAUREL STREET INTERSECTION STUDY
EXISTING AM/PM VOLUMES**

NOT TO SCALE



NO-BUILD CONDITION - 2029



NO-BUILD CONDITION - 2034

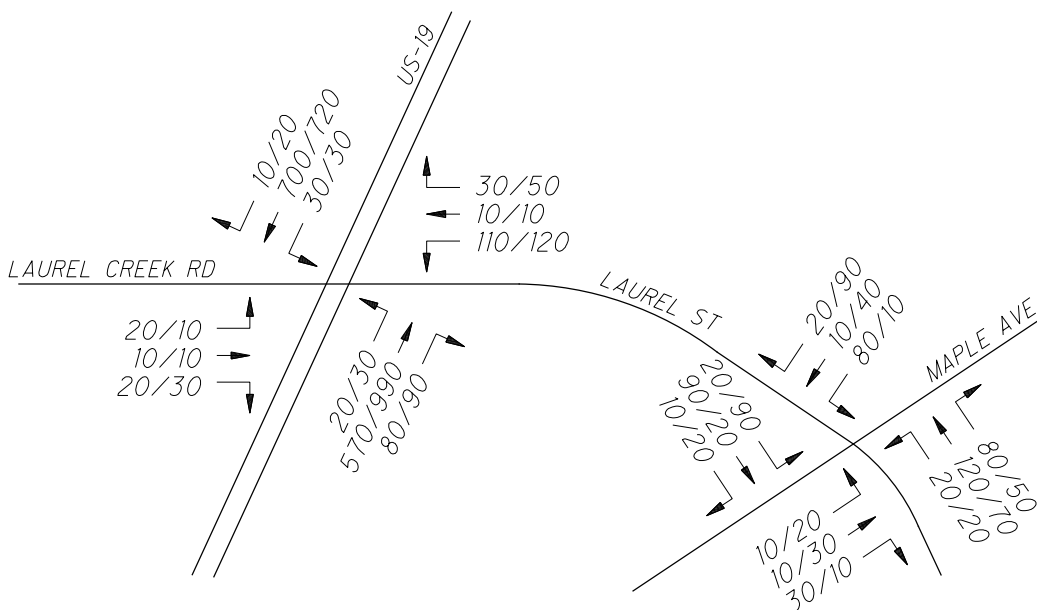


FIGURE 4

**LAUREL STREET INTERSECTION STUDY
NO-BUILD AM/PM VOLUMES**

NOT TO SCALE



NO-BUILD CONDITION - 2044

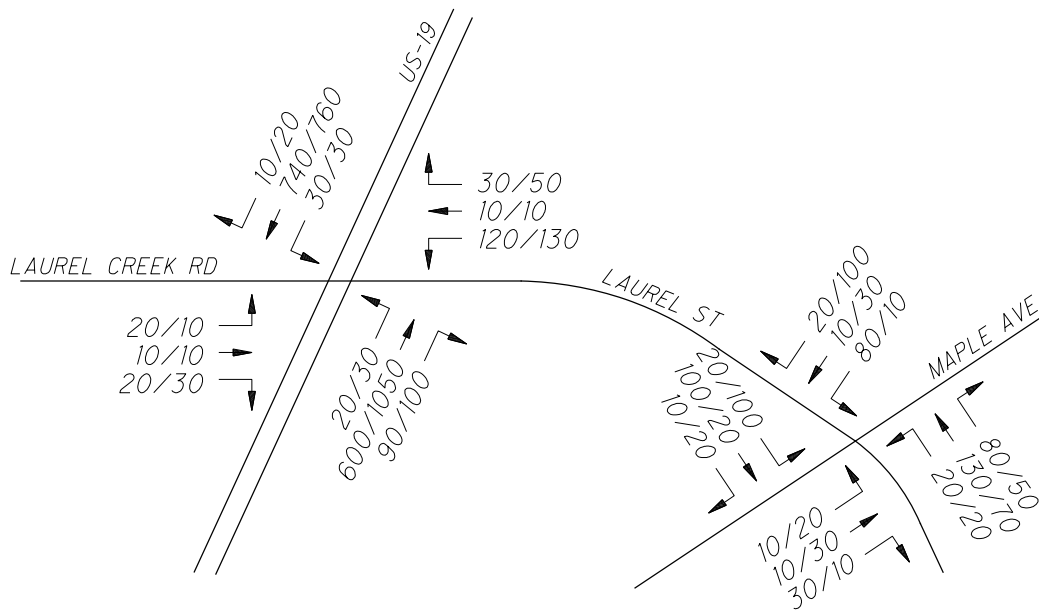


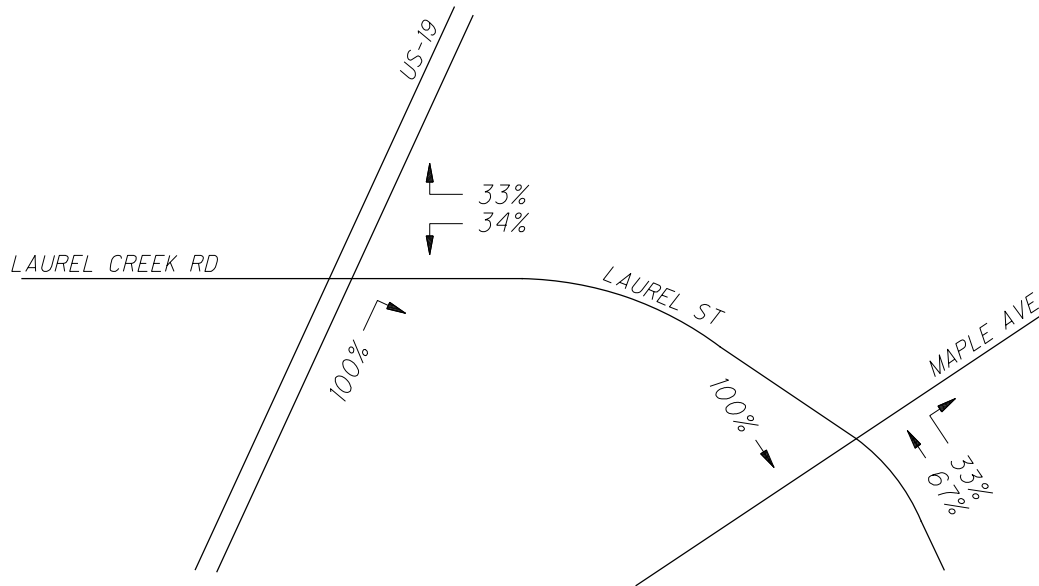
FIGURE 5

**LAUREL STREET INTERSECTION STUDY
NO-BUILD AM/PM VOLUMES**

NOT TO SCALE



2029 AM DIRECTIONAL DISTRIBUTION



2029 PM DIRECTIONAL DISTRIBUTION

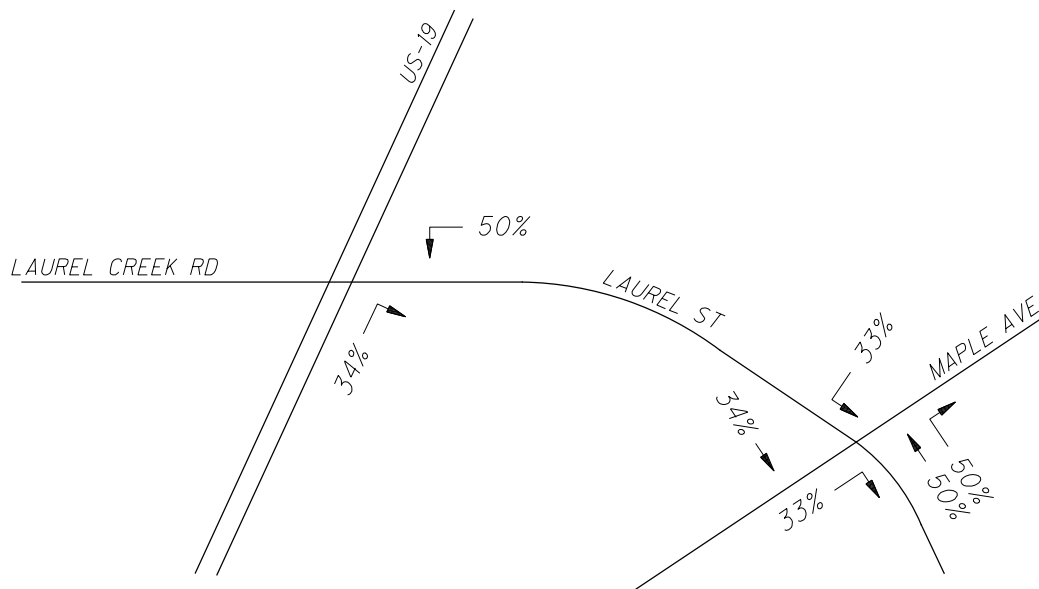


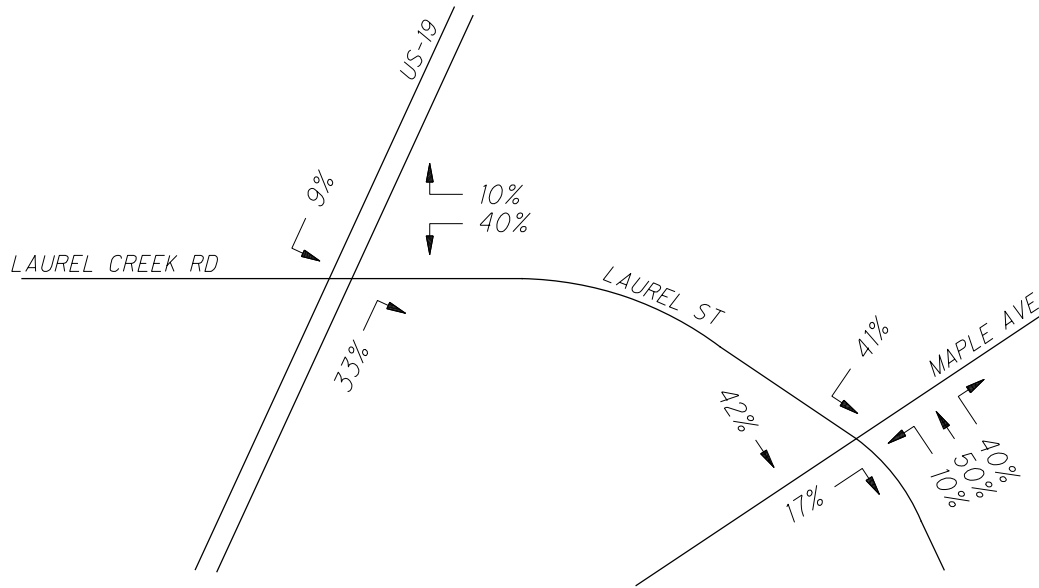
FIGURE 6

**LAUREL STREET INTERSECTION STUDY
2029 AM & PM DIRECTIONAL DISTRIBUTION**

NOT TO SCALE



2034 AM DIRECTIONAL DISTRIBUTION



2034 PM DIRECTIONAL DISTRIBUTION

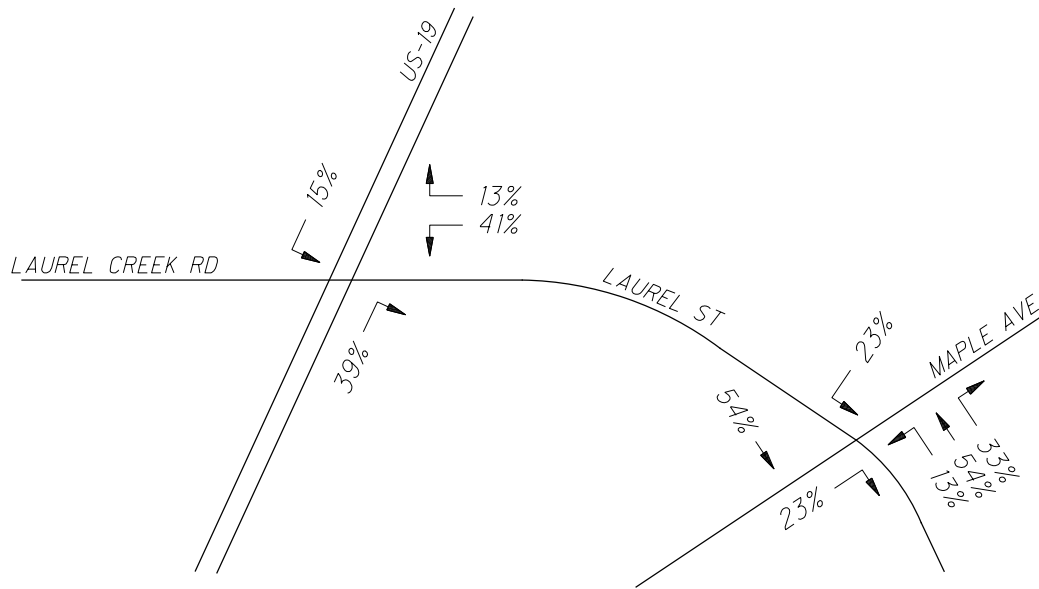


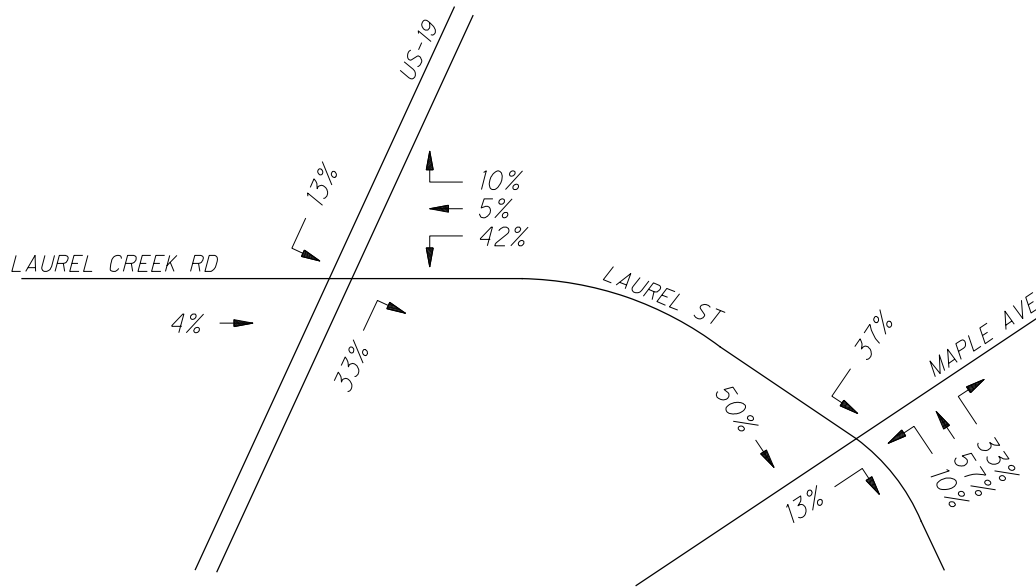
FIGURE 7

**LAUREL STREET INTERSECTION STUDY
2034 AM & PM DIRECTIONAL DISTRIBUTION**

NOT TO SCALE



2044 AM DIRECTIONAL DISTRIBUTION



2044 PM DIRECTIONAL DISTRIBUTION

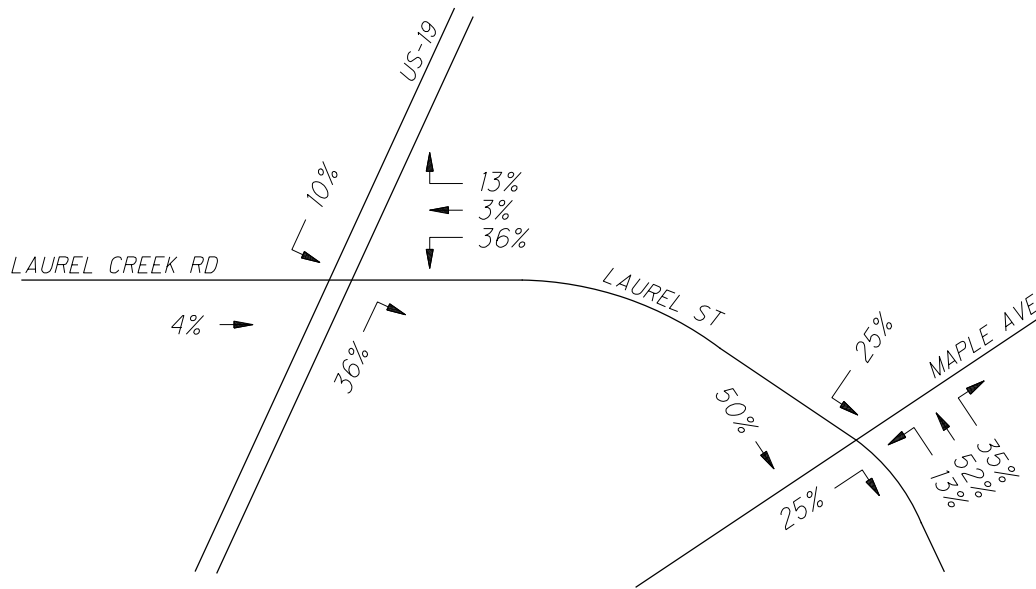


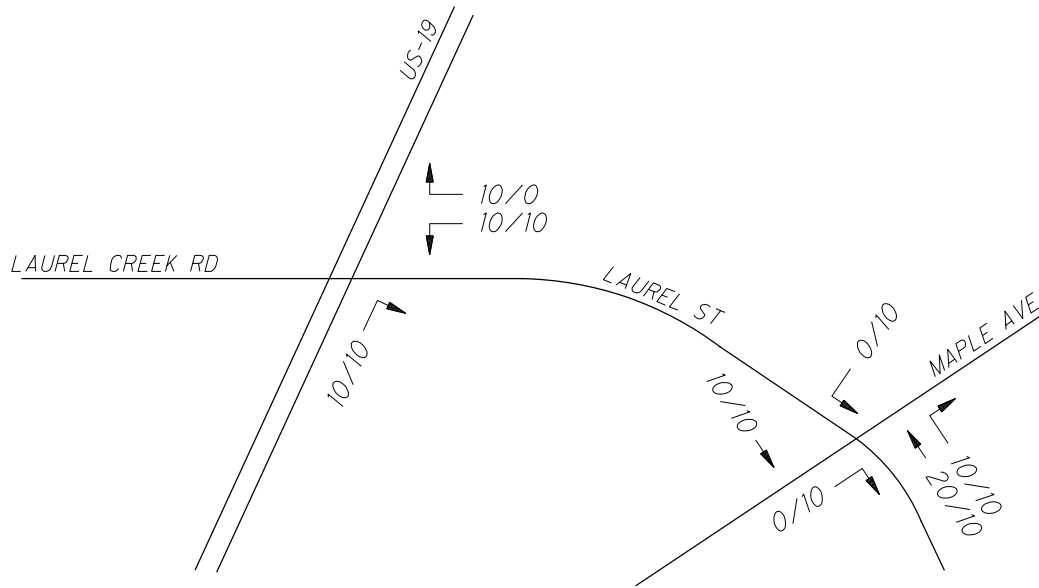
FIGURE 8

**LAUREL STREET INTERSECTION STUDY
2044 AM & PM DIRECTIONAL DISTRIBUTION**

NOT TO SCALE



2029 PRIMARY SITE TRIP ASSIGNMENTS



2029 BUILD CONDITION

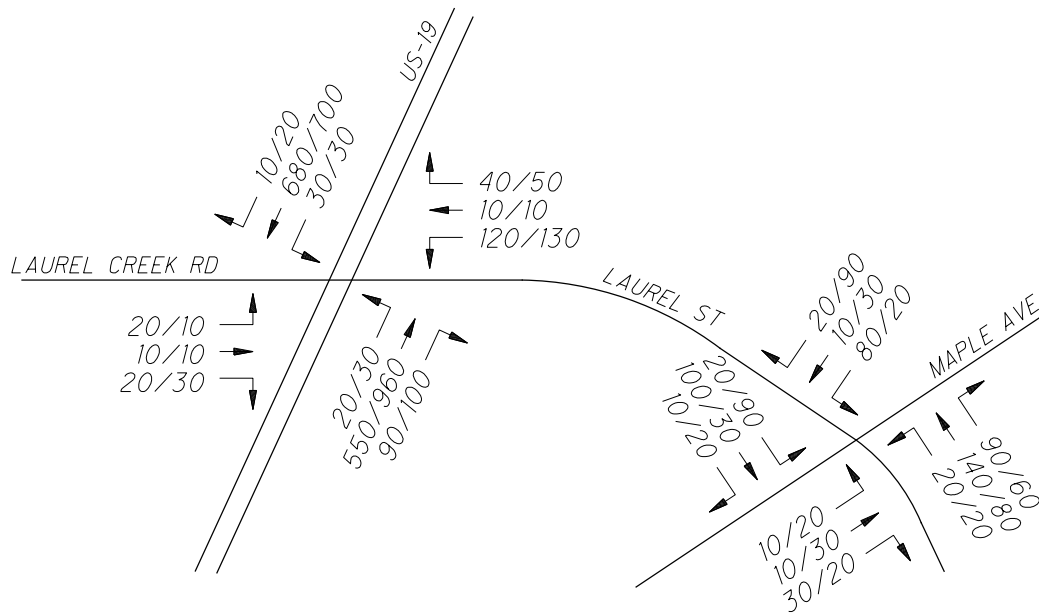


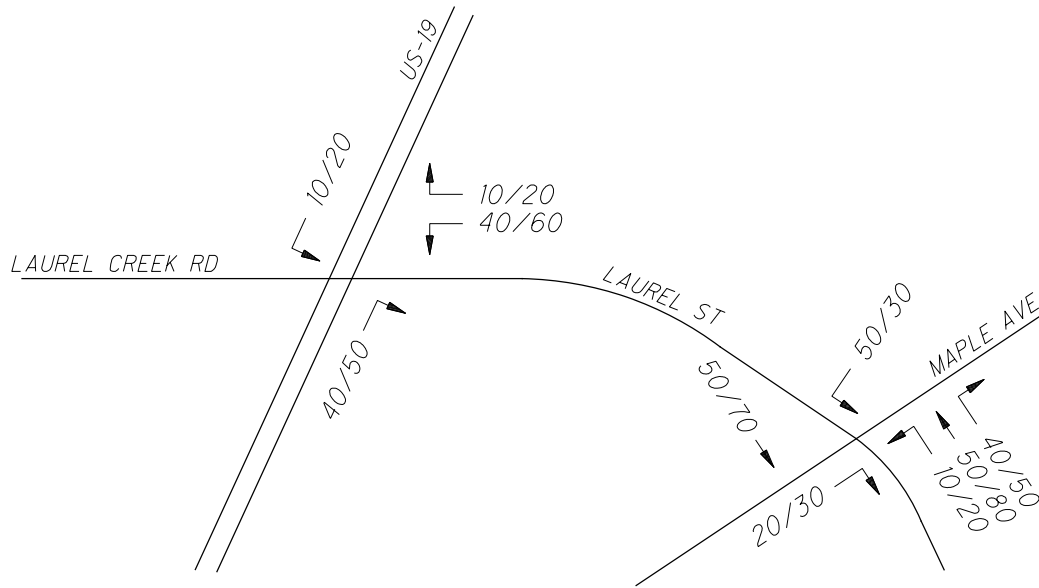
FIGURE 9

**LAUREL STREET INTERSECTION STUDY
2029 AM/PM SITE TRIPS AND BUILD VOLUME**

NOT TO SCALE



2034 PRIMARY SITE TRIP ASSIGNMENTS



2034 BUILD CONDITION

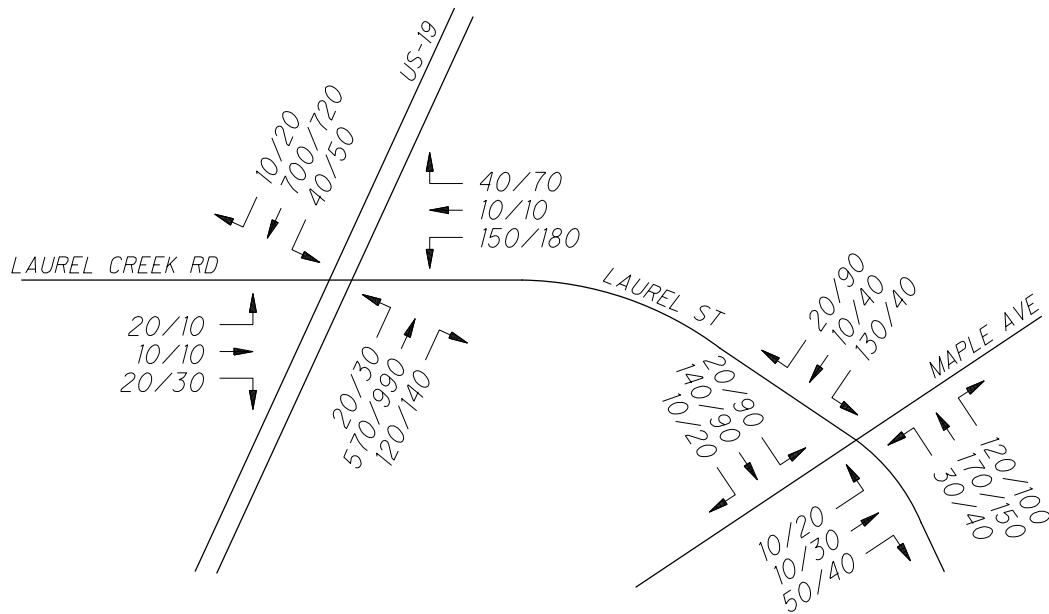


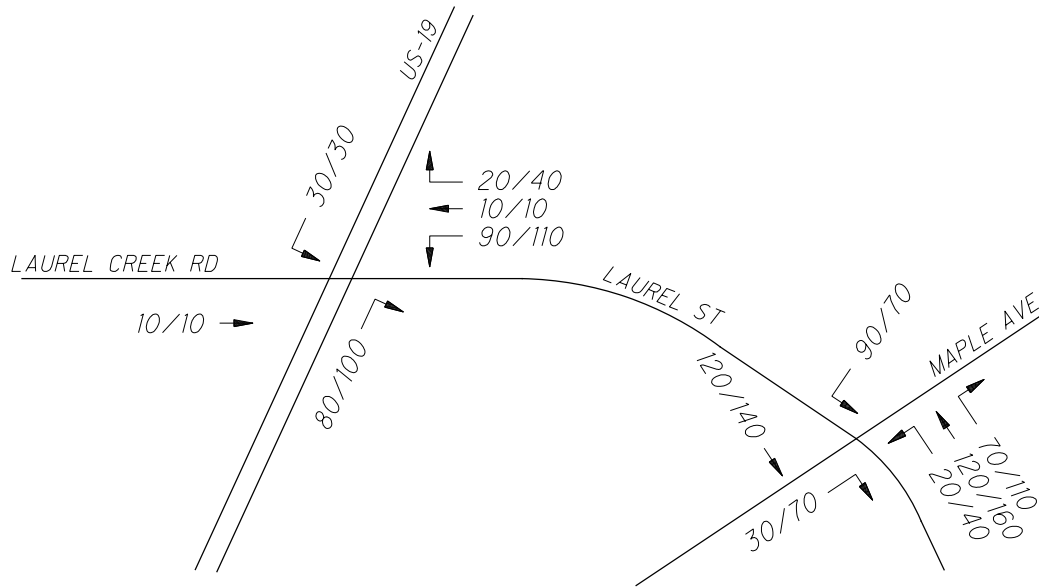
FIGURE 10

**LAUREL STREET INTERSECTION STUDY
2034 AM/PM SITE TRIPS AND BUILD VOLUME**

NOT TO SCALE



2044 PRIMARY SITE TRIP ASSIGNMENTS



2044 BUILD CONDITION

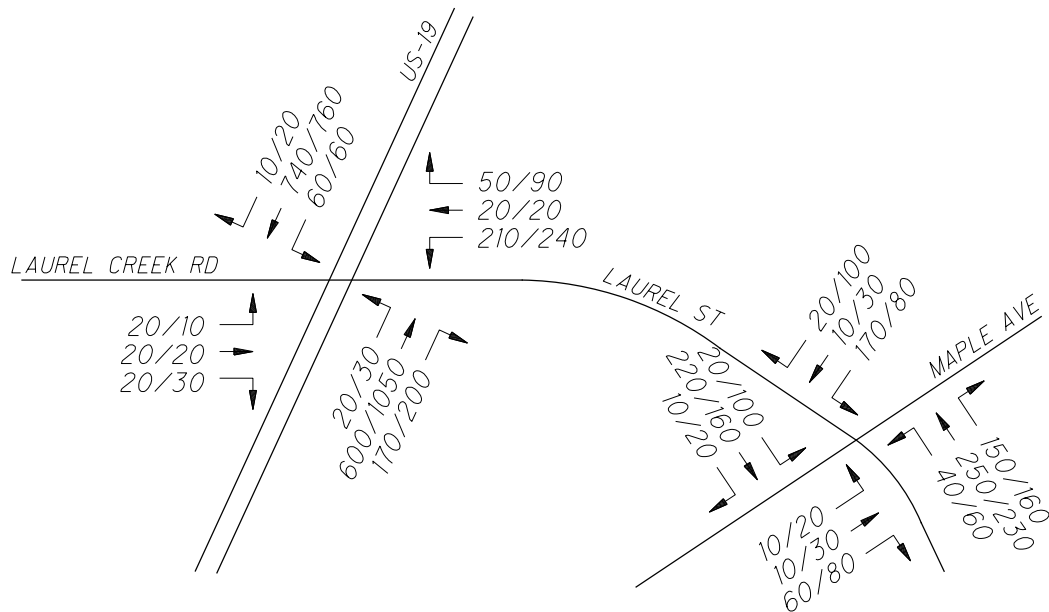


FIGURE 11

**LAUREL STREET INTERSECTION STUDY
2044 AM/PM SITE TRIPS AND BUILD VOLUME**

NOT TO SCALE



6.0 Operational Analysis

Three scenarios for the two study intersections were modeled using Synchro 12. Analysis results were reported using Highway Capacity Manual (HCM) 7th Edition methodologies for signalized and stop controlled intersections. Each scenario modeled AM and PM peak hours for 2029 opening year and 2034 and 2044 future years. The three alternatives included a No-Build condition; Build 1, a build condition with the addition of site traffic and existing roadway geometry; and Build 2, a build condition with site traffic and any improvements to roadway geometry. The acceptable operational goals for each intersection are no v/c > 1.0, LOS E or better for all approaches, and LOS D for the overall intersection. Table 4 provides LOS criteria as defined by the HCM. Outputs from the Synchro analysis is included in **Appendix B**.

Table 4 - LOS Criteria

LOS	Signalized Intersection Control Delay per Vehicle (Seconds)	Stop Controlled Intersection Control Delay per Vehicle (Seconds)
A	≤ 10	≤ 10
B	> 10 and 20	> 10 and 15
C	> 20 and 35	> 15 and 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

No-Build Analysis

The No-Build analysis for 2029 opening and 2034 and 2044 future years show that the two study intersections do not exceed capacity for any of the years analyzed. Most results did not change over the three years analyzed. Overall intersection LOS did not change at US 19 & Laurel Street. In both the AM and PM, the overall LOS was LOS B, and several approaches were LOS C. The 2044 analysis showed the southbound left turn lane reached capacity with QSR ratios of 1.0 in the AM and 0.95 in the PM peak hours At Maple Ave & Laurel Street the stop-controlled approaches were LOS C in the AM and LOS B in the PM. **Tables 5 and 6** show the AM and PM No Build analysis results.

Table 5: AM No-Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
2029 AM		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	B	B	C	C	B	B	C	B	B
Delay	14.9	19.3	21.4	22.0	13.0	10.9	23.7	14.7	11.1
v/c		0.15	0.43	0.10	0.45	0.15	0.21	0.60	0.02
QSR				0.36		0.12	0.65		0.06
95th %ile Queue		62'	130'	40'	132'	33'	65'	189'	17'
		B - 19.3	C - 21.4	B - 13.0			B - 15.0		
2034 AM									
LOS	B	C	C	B	A	A	D	C	B
Delay	18.5	26.2	29.3	17.3	9.2	7.7	35.2	23.7	17.1
v/c		0.18	0.53	0.05	0.34	0.11	0.41	0.77	0.03
QSR				0.36		0.15	0.67		0.07
95th %ile Queue		66'	140'	40'	132'	42'	67'	214'	21'
		C - 26.2	C - 39.3	A - 9.3			C - 24.1		
2044 AM									
LOS	B	C	C	B	A	A	C	C	B
Delay	18.5	26.0	29.5	17.9	9.4	7.9	35.0	23.6	16.5
v/c		0.18	0.56	0.05	0.36	0.12	0.41	0.78	0.02
QSR				0.30		0.16	1.00		0.07
95th %ile Queue		67'	145'	33'	130'	44'	100'	236'	21'
		C - 26.0	C - 29.5	A - 9.5			C - 24.0		

Laurel St & Maple Ave					
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue	Southbound Maple Avenue
2029 AM		LTR	LTR	LTR	LTR
LOS		C	C		
Delay		17.1	17.7		
v/c		0.38	0.54		
95th %ile Queue		80'	117'	12'	40'
		C - 17.1	C - 17.7		
2034 AM					
LOS		C	C		
Delay		17.1	17.7		
v/c		0.38	0.54		
95th %ile Queue		75'	109'	14'	34'
		C - 17.1	C - 17.7		
2044 AM					
LOS		C	C		
Delay		17.9	18.8		
v/c		0.41	0.57		
95th %ile Queue		87'	118'	12'	41'
		C - 17.9	C - 18.8		

Table 6: PM No-Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
2029 PM		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	B	C	C	B	B	A	C	C	B
Delay	17.5	24.8	28.6	18.2	11.8	8.2	34.3	22.4	16.8
v/c		0.15	0.58	0.07	0.56	0.12	0.40	0.72	0.05
QSR				0.39		0.12	0.98		0.08
95th %ile Queue		59'	151'	43'	192'	33'	98'	216'	25'
		C - 24.8	C - 28.6	B - 11.7			C - 22.7		
2034 PM									
LOS	B	C	C	B	B	A	C	C	B
Delay	17.9	25.0	29.0	18.0	12.0	8.2	34.7	23.3	17.1
v/c		0.15	0.58	0.06	0.57	0.12	0.40	0.75	0.05
QSR				0.51		0.14	0.72		0.08
95th %ile Queue		64'	151'	56'	208'	38'	72'	210'	25'
		C - 25.0	C - 29.0	B - 11.8			C - 23.5		
2044 PM									
LOS	B	C	C	B	B	A	D	C	B
Delay	18.6	25.3	29.6	18.8	12.7	8.5	35.6	24.3	17.2
v/c		0.15	0.60	0.07	0.61	0.13	0.40	0.78	0.05
QSR				0.36		0.18	0.95		0.10
95th %ile Queue		59'	161'	40'	201'	49'	95'	226'	31'
		C - 25.3	C - 29.6	B - 12.5			C - 24.5		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue		Southbound Maple Avenue			
2029 PM		LTR	LTR	LTR		LTR			
LOS		B	B						
Delay		13.7	11.7						
v/c		0.29	0.26						
95th %ile Queue		77'	84'	22'		11'			
		B - 13.7	B - 11.7						
2034 PM									
LOS		B	B						
Delay		13.7	11.7						
v/c		0.29	0.26						
95th %ile Queue		79'	73'	27'		14'			
		B - 13.7	B - 11.7						
2044 PM									
LOS		B	B						
Delay		14.2	11.8						
v/c		0.32	0.26						
95th %ile Queue		86'	76'	21'		13'			
		B - 14.2	B - 11.8						

Build Analysis

The Build analysis results show what impact the site trips will have on the study intersections and what building phase will trigger any necessary improvements for the intersections. Build 1 results show the impact of the added site trips without any changes to the road geometry. Build 2 results show how any changes to intersection stop control or geometry will mitigate any failing movements.

For 2029 opening year 43 additional trips were added in the AM and 56 trips were added in the PM. The additional site trips added to the intersection volumes did not warrant any changes to the intersections. Build 1 and Build 2 have the same results shown in **Tables 7 and 8**.

Table 7: 2029 AM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
AM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	B	C	C	B	A	A	C	C	B
Delay	18.4	25.2	29	17.8	9.5	8.2	34.7	23.1	16.9
v/c		0.17	0.57	0.05	0.34	0.12	0.41	0.74	0.03
QSR				0.32		0.15	0.85		0.07
95th %ile Queue		73'	149'	35'	128'	42'	85'	211'	22'
		C - 25.2	C - 29.0	A - 9.6			C - 23.4		
AM Build 2									
LOS	B	C	C	B	A	A	C	C	B
Delay	18.4	25.2	29	17.8	9.5	8.2	34.7	23.1	16.9
v/c		0.17	0.57	0.05	0.34	0.12	0.41	0.74	0.03
QSR				0.32		0.15	0.85		0.07
95th %ile Queue		73'	149'	35'	128'	42'	85'	211'	22'
		C - 25.2	C - 29.0	A - 9.6			C - 23.4		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
AM Build 1		LTR	LTR	LTR			LTR		
LOS		C	C						
Delay		18.3	20.0						
v/c		0.42	0.62						
95th %ile Queue		92'	116'	9'			43'		
		C - 18.3	C - 20.0						
AM Build 2									
LOS		C	C						
Delay		18.3	20.0						
v/c		0.42	0.62						
95th %ile Queue		92'	116'	9'			43'		
		C - 18.3	C - 20.0						

Table 8: 2029 PM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
PM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	B	C	C	B	B	A	C	C	B
Delay	17.7	24.2	28.3	18.6	12.3	8.6	34.2	22.4	16.7
v/c		0.15	0.59	0.07	0.57	0.13	0.40	0.72	0.05
QSR				0.60		0.13	0.84		0.10
95th %ile Queue		60'	164'	66'	205'	37'	84'	228'	29'
		C - 24.2	C - 28.3	B - 12.1			C - 22.7		
PM Build 2									
LOS	B	C	C	B	B	A	C	C	B
Delay	17.7	24.2	28.3	18.6	12.3	8.6	34.2	22.4	16.7
v/c		0.15	0.59	0.07	0.57	0.13	0.40	0.72	0.05
QSR				0.60		0.13	0.84		0.10
95th %ile Queue		60'	164'	66'	205'	37'	84'	228'	29'
		C - 24.2	C - 28.3	B - 12.1			C - 22.7		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
PM Build 1		LTR	LTR	LTR			LTR		
LOS		C	B						
Delay		15.2	12.5						
v/c		0.34	0.31						
95th %ile Queue		78'	89'	22'			17'		
		C - 15.2	B - 12.5						
PM Build 2									
LOS		C	B						
Delay		15.2	12.5						
v/c		0.34	0.31						
95th %ile Queue		78'	89'	22'			17'		
		C - 15.2	B - 12.5						

The Build 1 analysis for 2034 and 2044 future years shows what impact the additional site trips have on the intersections. For 2034 future year, there were 178 additional AM trips and 231 PM trips. In 2044 there were 234 AM and 313 PM additional trips.

At the intersection of US 19 & Laurel Street the additional trips do not create any capacity issues. Overall intersection LOS is LOS C for both AM and PM for 2034 and 2044 analysis. Southbound left-turn volumes are greater than what the existing turn lane can store. The Queue Storage Ratio (QSR) for 2034 is 1.01 in the AM and 1.12 in the PM. For 2044 the QSR is 1.31 in the AM and 1.49 in the PM. At Maple Avenue & Laurel Street the additional trips cause the stop-controlled approaches to fail. In 2034, the worst stop-controlled approaches are LOS F in the AM and LOS D in PM. In 2044 the PM also fails with LOS F.

The changes made to the intersections for the Build 2 scenario are to mitigate any failing movements. No geometric changes need to be made at US 19 and Laurel Street. The Build 1 and Build 2 analysis results are the same. At Maple Avenue & Laurel Street for the Build 2 analysis the intersection is changed to an all-way stop-controlled intersection, with single-lane for each approach. The 2034 AM analysis shows the all-way stop is operating at LOS C with approaches at LOS C or better. The PM analysis shows the intersection operating at LOS B and all approaches at LOS B. The 2044 analysis results initially showed over all intersection LOS F and LOS F for the westbound approach in the AM as a single-lane approach. In the Synchro model, this approach was changed to a through/left-turn lane and a right-turn lane. The addition of the right-turn lane results in overall LOS C and approaches are LOS D or better for the AM and overall LOS C and approaches are LOS C or better for the PM.

Tables 9 through 12 show the Build 1 and Build 2 results for 2034 and 2044 future years.

Turn Lane Lengths

Northbound and southbound right and left turn lanes are in place at US 19 & Laurel Street. The No-Build analysis shows that the existing storage lengths for these movements is adequate. However, with the addition of the site traffic, the southbound left turning queue is expected to exceed the available storage length by 2034. In order to accommodate the site traffic in 2034 and 2044, the southbound left turn storage length needs to be increased to 150 feet plus the taper length necessary to develop the turn lane.

At the Laurel Street & Maple Avenue intersection, storage lanes are not required in the No-Build condition. With the addition of the site traffic, the westbound approach on Laurel Creek Road will require a right turn lane to achieve acceptable operations. The right turn lane storage length needs to be 225 feet plus the taper length necessary to develop the turn lane.

Table 9: 2034 AM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
AM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	C	C	C	B	B	A	D	C	B
Delay	21.0	26.9	31.9	19.3	10.8	9.6	38.7	26.7	19.3
v/c		0.16	0.63	0.05	0.35	0.17	0.47	0.78	0.03
QSR				0.35		0.19	1.01		0.07
95th %ile Queue		68'	168'	38'	145'	52'	101'	241'	22'
		C - 26.9	C - 31.9	B - 10.9			C - 27.3		
AM Build 2									
LOS	C	C	C	B	B	A	D	C	B
Delay	21.0	26.9	31.9	19.3	10.8	9.6	38.7	26.7	19.3
v/c		0.16	0.63	0.05	0.35	0.17	0.47	0.78	0.03
QSR				0.39		0.18	1.06		0.08
95th %ile Queue		76'	176'	43'	150'	49'	106'	238'	23'
		C - 26.9	C - 31.9	B - 10.9			C - 27.3		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
AM Build 1		LTR	LTR	LTR			LTR		
LOS		F	F						
Delay		54.2	97.9						
v/c		0.83	1.08						
95th %ile Queue		104'	195'	21'			53'		
		F - 54.2	F - 97.9						
AM Build 2									
LOS	C	B	C	B			B		
Delay	16.1	13.0	20.1	10.5			13.8		
v/c		0.42	0.71	0.18			0.42		
95th %ile Queue		96'	160'	57'			109'		
		B - 13.0	C - 20.1	B - 10.5			B - 13.8		

Table 10: 2034 PM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
PM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	C	C	C	C	B	B	D	C	C
Delay	22.4	24.6	31.0	21.3	16.3	11.8	39.1	28.5	20.4
v/c		0.12	0.68	0.07	0.62	0.20	0.50	0.79	0.05
QSR				0.55		0.19	1.12		0.10
95th %ile Queue		61'	194'	60'	241'	52'	112'	242'	30'
		C - 24.6	C - 31.0	B - 15.9			C - 28.9		
PM Build 2									
LOS	C	C	C	C	B	B	D	C	C
Delay	22.4	24.6	31.0	21.3	16.3	11.8	39.1	28.5	20.4
v/c		0.12	0.68	0.07	0.62	0.20	0.50	0.79	0.05
QSR				0.74		0.17	1.20		0.10
95th %ile Queue		55'	203'	81'	250'	48'	120'	240'	31'
		C - 24.6	C - 31.0	B - 15.9			C - 28.9		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
PM Build 1		LTR	LTR	LTR			LTR		
LOS		D	C						
Delay		30.0	20.9						
v/c		0.66	0.64						
95th %ile Queue		102'	170'	23'			36'		
		D - 30.0	C - 20.9						
PM Build 2									
LOS	B	B	B	B			B		
Delay	12.8	12.4	14.6	10.4			11.3		
v/c		0.41	0.56	0.20			0.33		
95th %ile Queue		90'	106'	68'			73'		
		B - 12.4	B - 14.6	B - 10.4			B - 11.3		

Table 11: 2044 AM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
AM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	C	C	C	C	B	B	D	C	B
Delay	23.6	23.6	30.6	23.4	14.9	13.9	39.8	29.0	19.5
v/c		0.15	0.71	0.06	0.43	0.27	0.57	0.81	0.03
QSR				0.35		0.27	1.31		0.07
95th %ile Queue		81'	233'	38'	172'	74'	131'	261'	20'
		C - 23.6	C - 30.6	B - 14.9			C - 29.6		
AM Build 2									
LOS	C	C	C	C	B	B	D	C	B
Delay	23.6	23.6	30.6	23.4	14.9	13.9	39.8	29.0	19.5
v/c		0.15	0.71	0.06	0.43	0.27	0.57	0.81	0.03
QSR				0.35		0.29	1.42		0.07
95th %ile Queue		94'	237'	39'	185'	79'	142'	266'	20'
		C - 23.6	C - 30.6	B - 14.9			C - 29.6		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
AM Build 1		LTR	LTR	LTR			LTR		
LOS		F	F						
Delay		173.2	325.8						
v/c		1.25	1.65						
95th %ile Queue		223'	638'	22'			77'		
		F - 173.2	F - 325.8						
AM Build 2									
LOS	C	C	E	B	B			C	
Delay	24.8	24.8	37.0	12.9	12.9			20.9	
v/c		0.70	0.84	0.39	0.25			0.61	
95th %ile Queue		170'	204'	95'	66'			115'	
		C - 24.8	D - 28.8	B - 12.9			C - 20.9		

Table 12: 2044 PM Build Analysis Results

US 19 & Laurel St									
		Eastbound Laurel Creek Rd	Westbound Laurel Street	Northbound US 19			Southbound US 19		
PM Build 1		LTR	LTR	LT	TH	RT	LT	TH	RT
LOS	C	C	C	C	C	B	D	C	C
Delay	27.8	24.2	35.0	27.2	22.3	16.4	46.3	34.0	23.3
v/c		0.12	0.77	0.08	0.71	0.30	0.60	0.82	0.05
QSR				1.01		0.41	1.49		0.07
95th %ile Queue		69'	274'	111'	298'	112'	149'	282'	21'
		C - 24.2	C - 35.0	C - 21.5			C - 34.6		
PM Build 2									
LOS	C	C	C	C	C	B	D	C	C
Delay	27.8	24.2	35.0	27.2	22.3	16.4	46.3	34.0	23.3
v/c		0.12	0.77	0.08	0.71	0.30	0.60	0.82	0.05
QSR				0.91		0.35	1.41		0.10
95th %ile Queue		65'	258'	100'	309'	97'	141'	273'	30'
		C - 24.2	C - 35.0	C - 21.5			C - 34.6		
Laurel St & Maple Ave									
		Eastbound Laurel Street	Westbound Laurel Creek Rd	Northbound Maple Avenue			Southbound Maple Avenue		
PM Build 1		LTR	LTR	LTR			LTR		
LOS		F	F						
Delay		569.1	192.8						
v/c		2.13	1.34						
95th %ile Queue		168'	610'	39'			48'		
		F - 569.1	F - 192.8						
PM Build 2									
LOS	C	C	D	B	B			C	
Delay	21.2	24.3	28.6	12.7	14.2			17.8	
v/c		0.70	0.75	0.37	0.35			0.53	
95th %ile Queue		105'	95'	69'	66'			69'	
		C - 24.3	C - 22.9	B - 14.2			C - 17.8		

7.0 Conclusions

The trips generated from the Cascade Village development will have an impact on the two study intersections. Maple Avenue & Laurel Street will see the majority of the new site trips. To accommodate the additional traffic and stay within acceptable operational goals the two-way stop control should be changed to an all-way stop-control by 2034. By 2044, a 225 foot right turn lane will be required on the westbound approach. At the intersection of US 19 & Laurel Street the additional site trips will require the southbound left turn lane storage length to be increased to 150 feet by 2034.

Appendix A:

Raw Turn Counts

US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

Full Length (6 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	US 19 Southbound					Laurel St Westbound					US 19 Northbound					Laurel Creek Rd Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-04-25 6:00AM	0	82	0	0	82	1	0	5	0	6	0	53	3	0	56	0	0	1	0	1	145
6:15AM	3	107	0	0	110	4	0	7	0	11	1	51	0	0	52	2	0	2	0	4	177
6:30AM	5	139	0	0	144	8	1	9	0	18	8	70	4	0	82	4	0	2	0	6	250
6:45AM	1	131	0	0	132	6	3	8	0	17	4	71	7	0	82	8	0	7	0	15	246
Hourly Total	9	459	0	0	468	19	4	29	0	52	13	245	14	0	272	14	0	12	0	26	818
7:00AM	4	155	2	0	161	4	0	5	0	9	5	109	3	0	117	10	1	6	0	17	304
7:15AM	5	174	3	0	182	3	1	7	0	11	9	119	2	0	130	3	1	3	0	7	330
7:30AM	0	169	7	0	176	5	1	12	0	18	14	123	2	0	139	7	2	2	0	11	344
7:45AM	3	160	9	0	172	12	4	35	0	51	26	137	6	0	169	10	2	2	0	14	406
Hourly Total	12	658	21	0	691	24	6	59	0	89	54	488	13	0	555	30	6	13	0	49	1384
8:00AM	0	162	13	0	175	8	2	40	0	50	23	121	5	0	149	2	2	3	0	7	381
8:15AM	2	152	6	0	160	6	4	28	0	38	16	121	3	0	140	3	1	4	0	8	346
8:30AM	0	185	1	0	186	8	1	12	0	21	11	147	6	0	164	3	2	6	0	11	382
8:45AM	5	143	1	0	149	1	0	15	0	16	11	135	5	0	151	6	1	6	0	13	329
Hourly Total	7	642	21	0	670	23	7	95	0	125	61	524	19	0	604	14	6	19	0	39	1438
9:00AM	2	137	2	0	141	1	0	12	0	13	10	123	2	1	136	5	1	4	0	10	300
9:15AM	3	162	1	0	166	3	1	11	0	15	8	138	6	1	153	5	1	1	0	7	341
9:30AM	2	156	3	0	161	4	3	7	0	14	8	126	3	0	137	6	1	5	0	12	324
9:45AM	2	160	4	0	166	7	4	18	0	29	11	112	6	1	130	3	3	4	0	10	335
Hourly Total	9	615	10	0	634	15	8	48	0	71	37	499	17	3	556	19	6	14	0	39	1300
10:00AM	1	154	0	0	155	8	3	11	0	22	12	165	3	0	180	9	4	1	0	14	371
10:15AM	0	152	2	0	154	4	2	12	0	18	11	149	10	0	170	4	3	4	0	11	353
10:30AM	2	152	1	0	155	7	1	18	0	26	13	130	5	0	148	7	3	2	0	12	341
10:45AM	0	154	2	0	156	6	2	11	0	19	11	146	4	0	161	9	2	3	0	14	350
Hourly Total	3	612	5	0	620	25	8	52	0	85	47	590	22	0	659	29	12	10	0	51	1415
11:00AM	0	152	2	0	154	6	1	18	0	25	8	163	3	0	174	4	1	2	0	7	360
11:15AM	1	177	3	0	181	3	2	15	0	20	13	161	5	0	179	11	2	3	0	16	396
11:30AM	2	169	2	0	173	5	1	16	0	22	18	135	5	1	159	3	1	1	0	5	359
11:45AM	1	166	5	0	172	7	0	21	0	28	22	153	4	0	179	8	2	2	0	12	391
Hourly Total	4	664	12	0	680	21	4	70	0	95	61	612	17	1	691	26	6	8	0	40	1506
12:00PM	0	166	5	0	171	11	2	24	0	37	23	170	6	0	199	5	2	2	0	9	416
12:15PM	4	214	4	0	222	11	1	25	0	37	20	165	8	0	193	14	1	6	0	21	473
12:30PM	0	189	3	0	192	8	3	15	0	26	24	176	9	0	209	4	1	1	0	6	433
12:45PM	1	159	1	0	161	7	1	19	0	27	19	185	4	0	208	5	1	1	0	7	403
Hourly Total	5	728	13	0	746	37	7	83	0	127	86	696	27	0	809	28	5	10	0	43	1725
1:00PM	4	167	2	0	173	5	1	18	0	24	25	175	9	0	209	6	2	4	0	12	418
1:15PM	6	144	8	0	158	9	1	15	0	25	23	178	7	0	208	7	2	3	0	12	403
1:30PM	1	183	6	0	190	10	2	17	0	29	27	196	5	0	228	6	0	2	0	8	455
1:45PM	3	186	4	1	194	10	1	20	0	31	26	217	8	0	251	3	2	4	0	9	485
Hourly Total	14	680	20	1	715	34	5	70	0	109	101	766	29	0	896	22	6	13	0	41	1761
2:00PM	4	181	9	0	194	11	1	12	0	24	16	183	5	0	204	7	4	2	0	13	435
2:15PM	6	160	3	0	169	6	3	19	0	28	17	197	8	0	222	5	2	1	0	8	427
2:30PM	2	179	4	0	185	6	1	23	0	30	28	172	5	0	205	11	1	3	0	15	435
2:45PM	4	186	9	0	199	5	5	22	0	32	20	215	12	0	247	6	2	2	0	10	488
Hourly Total	16	706	25	0	747	28	10	76	0	114	81	767	30	0	878	29	9	8	0	46	1785
3:00PM	3	165	7	0	175	7	1	26	0	34	35	214	6	0	255	10	4	3	0	17	481
3:15PM	4	170	13	0	187	12	0	16	0	28	26	254	14	0	294	5	1	6	0	12	521
3:30PM	3	158	6	0	167	13	2	50	0	65	29	221	5	0	255	9	0	4	0	13	500
3:45PM	4	173	7	0	184	13	2	29	0	44	26	222	4	1	253	5	0	1	0	6	487
Hourly Total	14	666	33	0	713	45	5	121	0	171	116	911	29	1	1057	29	5	14	0	48	1989
4:00PM	4	181	5	0	190	16	4	31	0	51	37	233	8	0	278	12	2	0	0	14	533
4:15PM	1	167	3	0	171	6	5	24	0	35	31	243	10	0	284	6	4	2	0	12	502
4:30PM	7	177	5	0	189	14	8	31	0	53	27	236	10	0	273	7	1	4	0	12	527
4:45PM	4	177	5	0	186	17	2	21	0	40	29	251	8	0	288	9	3	5	0	17	531

Leg Direction	US 19 Southbound					Laurel St Westbound					US 19 Northbound					Laurel Creek Rd Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
Hourly Total	16	702	18	0	736	53	19	107	0	179	124	963	36	0	1123	34	10	11	0	55	2093
5:00PM	7	145	6	0	158	6	4	22	0	32	25	239	9	0	273	4	3	1	0	8	471
5:15PM	4	153	11	0	168	13	2	20	0	35	40	221	9	0	270	5	6	4	0	15	488
5:30PM	6	171	10	0	187	11	0	13	0	24	37	225	7	0	269	15	1	4	0	20	500
5:45PM	0	138	6	0	144	9	4	11	0	24	36	186	8	0	230	11	1	3	0	15	413
Hourly Total	17	607	33	0	657	39	10	66	0	115	138	871	33	0	1042	35	11	12	0	58	1872
6:00PM	2	135	6	0	143	11	0	16	0	27	27	175	10	0	212	6	0	6	0	12	394
6:15PM	3	148	7	0	158	11	3	19	0	33	19	162	3	0	184	4	2	4	0	10	385
6:30PM	0	140	6	0	146	8	2	13	0	23	23	190	4	0	217	7	0	4	0	11	397
6:45PM	0	96	9	0	105	17	3	41	0	61	26	173	4	0	203	3	2	1	0	6	375
Hourly Total	5	519	28	0	552	47	8	89	0	144	95	700	21	0	816	20	4	15	0	39	1551
Total	131	8258	239	1	8629	410	101	965	0	1476	1014	8632	307	5	9958	329	86	159	0	574	20637
% Approach	1.5%	95.7%	2.8%	0%	-	27.8%	6.8%	65.4%	0%	-	10.2%	86.7%	3.1%	0.1%	-	57.3%	15.0%	27.7%	0%	-	-
% Total	0.6%	40.0%	1.2%	0%	41.8%	2.0%	0.5%	4.7%	0%	7.2%	4.9%	41.8%	1.5%	0%	48.3%	1.6%	0.4%	0.8%	0%	2.8%	-
Lights	124	7413	230	1	7768	398	92	948	0	1438	992	7718	299	5	9014	316	78	153	0	547	18767
% Lights	94.7%	89.8%	96.2%	100%	90.0%	97.1%	91.1%	98.2%	0%	97.4%	97.8%	89.4%	97.4%	100%	90.5%	96.0%	90.7%	96.2%	0%	95.3%	90.9%
Articulated Trucks	1	568	0	0	569	2	0	2	0	4	4	641	1	0	646	2	0	0	0	2	1221
% Articulated Trucks	0.8%	6.9%	0%	0%	6.6%	0.5%	0%	0.2%	0%	0.3%	0.4%	7.4%	0.3%	0%	6.5%	0.6%	0%	0%	0%	0.3%	5.9%
Buses and Single-Unit Trucks	6	277	9	0	292	10	9	15	0	34	18	273	7	0	298	11	8	6	0	25	649
% Buses and Single-Unit Trucks	4.6%	3.4%	3.8%	0%	3.4%	2.4%	8.9%	1.6%	0%	2.3%	1.8%	3.2%	2.3%	0%	3.0%	3.3%	9.3%	3.8%	0%	4.4%	3.1%

*L: Left, R: Right, T: Thru, U: U-Turn

US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

Full Length (6 AM-7 PM)

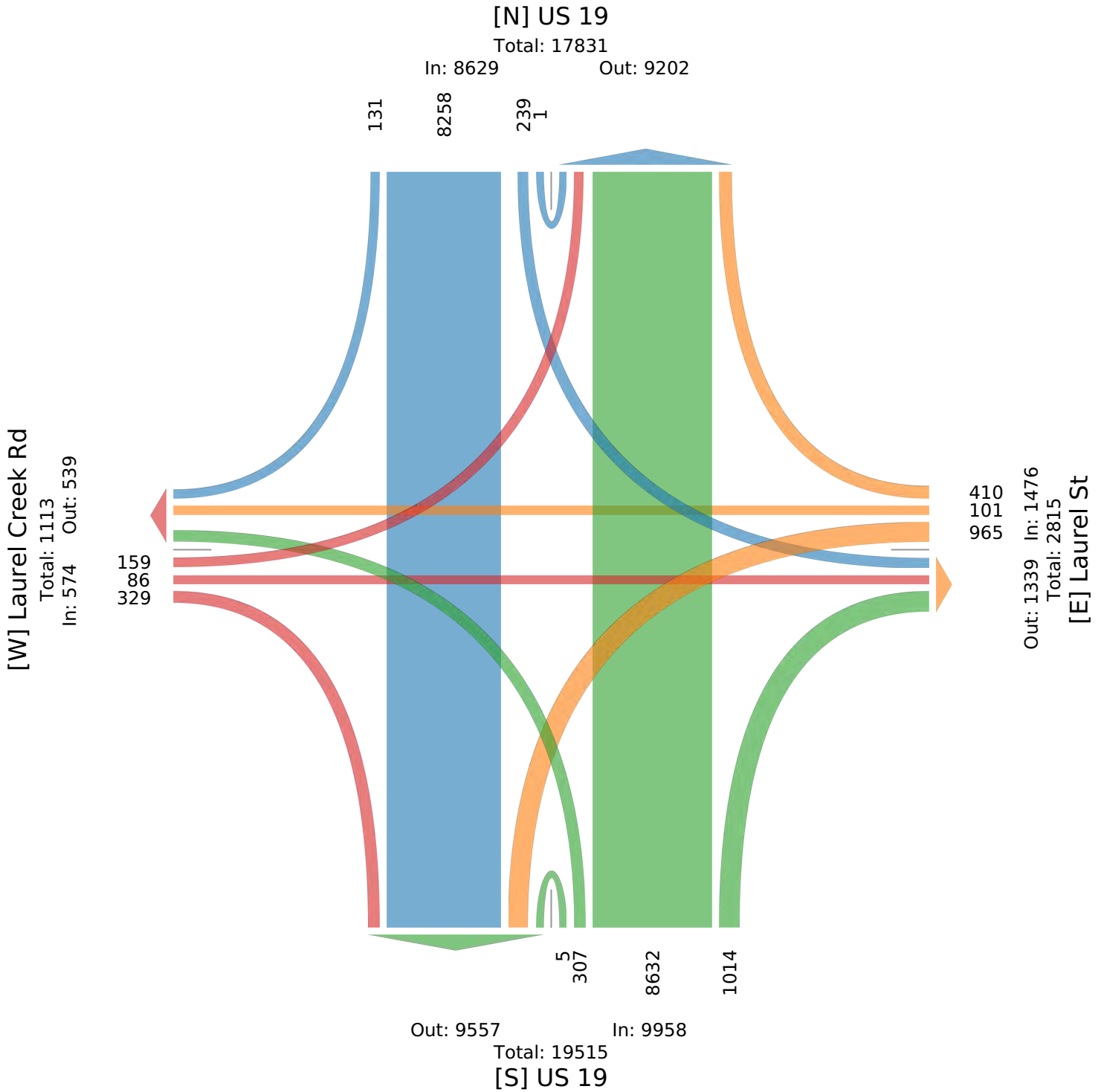
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	US 19 Southbound					Laurel St Westbound					US 19 Northbound					Laurel Creek Rd Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-04-25 7:45AM	3	160	9	0	172	12	4	35	0	51	26	137	6	0	169	10	2	2	0	14	406
8:00AM	0	162	13	0	175	8	2	40	0	50	23	121	5	0	149	2	2	3	0	7	381
8:15AM	2	152	6	0	160	6	4	28	0	38	16	121	3	0	140	3	1	4	0	8	346
8:30AM	0	185	1	0	186	8	1	12	0	21	11	147	6	0	164	3	2	6	0	11	382
Total	5	659	29	0	693	34	11	115	0	160	76	526	20	0	622	18	7	15	0	40	1515
% Approach	0.7%	95.1%	4.2%	0%	-	21.3%	6.9%	71.9%	0%	-	12.2%	84.6%	3.2%	0%	-	45.0%	17.5%	37.5%	0%	-	-
% Total	0.3%	43.5%	1.9%	0%	45.7%	2.2%	0.7%	7.6%	0%	10.6%	5.0%	34.7%	1.3%	0%	41.1%	1.2%	0.5%	1.0%	0%	2.6%	-
PHF	0.417	0.891	0.558	-	0.931	0.708	0.688	0.719	-	0.784	0.731	0.895	0.833	-	0.920	0.450	0.875	0.625	-	0.714	0.933
Lights	5	588	27	0	620	33	10	110	0	153	75	451	20	0	546	18	6	13	0	37	1356
% Lights	100%	89.2%	93.1%	0%	89.5%	97.1%	90.9%	95.7%	0%	95.6%	98.7%	85.7%	100%	0%	87.8%	100%	85.7%	86.7%	0%	92.5%	89.5%
Articulated Trucks	0	41	0	0	41	0	0	0	0	0	1	52	0	0	53	0	0	0	0	0	94
% Articulated Trucks	0%	6.2%	0%	0%	5.9%	0%	0%	0%	0%	0%	1.3%	9.9%	0%	0%	8.5%	0%	0%	0%	0%	0%	6.2%
Buses and Single-Unit Trucks	0	30	2	0	32	1	1	5	0	7	0	23	0	0	23	0	1	2	0	3	65
% Buses and Single-Unit Trucks	0%	4.6%	6.9%	0%	4.6%	2.9%	9.1%	4.3%	0%	4.4%	0%	4.4%	0%	0%	3.7%	0%	14.3%	13.3%	0%	7.5%	4.3%

* L: Left, R: Right, T: Thru, U: U-Turn

US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

AM Peak (7:45 AM - 8:45 AM)

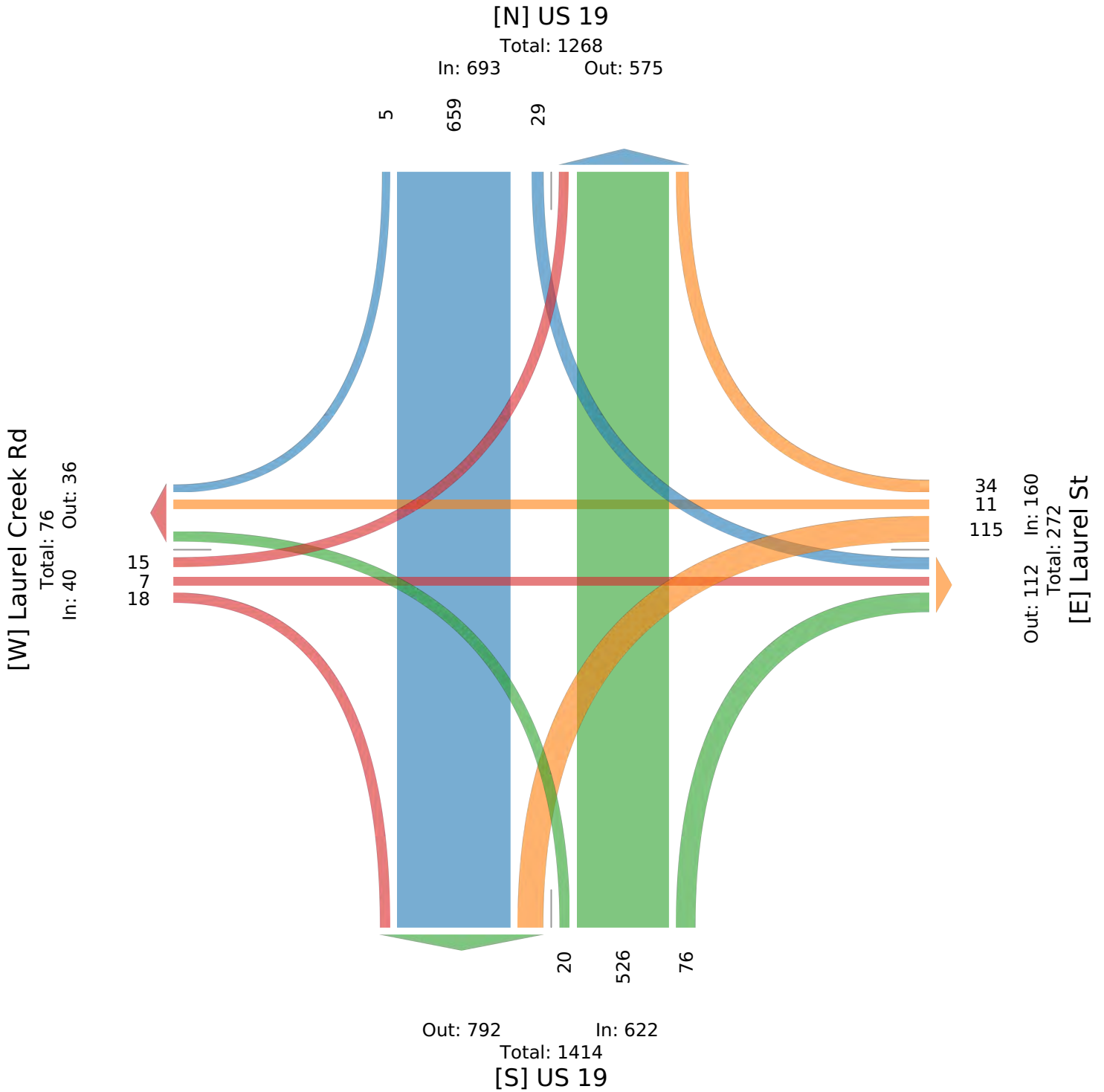
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

Midday Peak (1 PM - 2 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	US 19 Southbound					Laurel St Westbound					US 19 Northbound					Laurel Creek Rd Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-04-25 1:00PM	4	167	2	0	173	5	1	18	0	24	25	175	9	0	209	6	2	4	0	12	418
1:15PM	6	144	8	0	158	9	1	15	0	25	23	178	7	0	208	7	2	3	0	12	403
1:30PM	1	183	6	0	190	10	2	17	0	29	27	196	5	0	228	6	0	2	0	8	455
1:45PM	3	186	4	1	194	10	1	20	0	31	26	217	8	0	251	3	2	4	0	9	485
Total	14	680	20	1	715	34	5	70	0	109	101	766	29	0	896	22	6	13	0	41	1761
% Approach	2.0%	95.1%	2.8%	0.1%	-	31.2%	4.6%	64.2%	0%	-	11.3%	85.5%	3.2%	0%	-	53.7%	14.6%	31.7%	0%	-	-
% Total	0.8%	38.6%	1.1%	0.1%	40.6%	1.9%	0.3%	4.0%	0%	6.2%	5.7%	43.5%	1.6%	0%	50.9%	1.2%	0.3%	0.7%	0%	2.3%	-
PHF	0.583	0.914	0.625	0.250	0.921	0.850	0.625	0.875	-	0.879	0.935	0.882	0.806	-	0.892	0.786	0.750	0.813	-	0.854	0.908
Lights	12	590	20	1	623	34	5	69	0	108	100	688	29	0	817	22	6	11	0	39	1587
% Lights	85.7%	86.8%	100%	100%	87.1%	100%	100%	98.6%	0%	99.1%	99.0%	89.8%	100%	0%	91.2%	100%	100%	84.6%	0%	95.1%	90.1%
Articulated Trucks	0	50	0	0	50	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	110
% Articulated Trucks	0%	7.4%	0%	0%	7.0%	0%	0%	0%	0%	0%	0%	7.8%	0%	0%	6.7%	0%	0%	0%	0%	0%	6.2%
Buses and Single-Unit Trucks	2	40	0	0	42	0	0	1	0	1	1	18	0	0	19	0	0	2	0	2	64
% Buses and Single-Unit Trucks	14.3%	5.9%	0%	0%	5.9%	0%	0%	1.4%	0%	0.9%	1.0%	2.3%	0%	0%	2.1%	0%	0%	15.4%	0%	4.9%	3.6%

* L: Left, R: Right, T: Thru, U: U-Turn

US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

Midday Peak (1 PM - 2 PM)

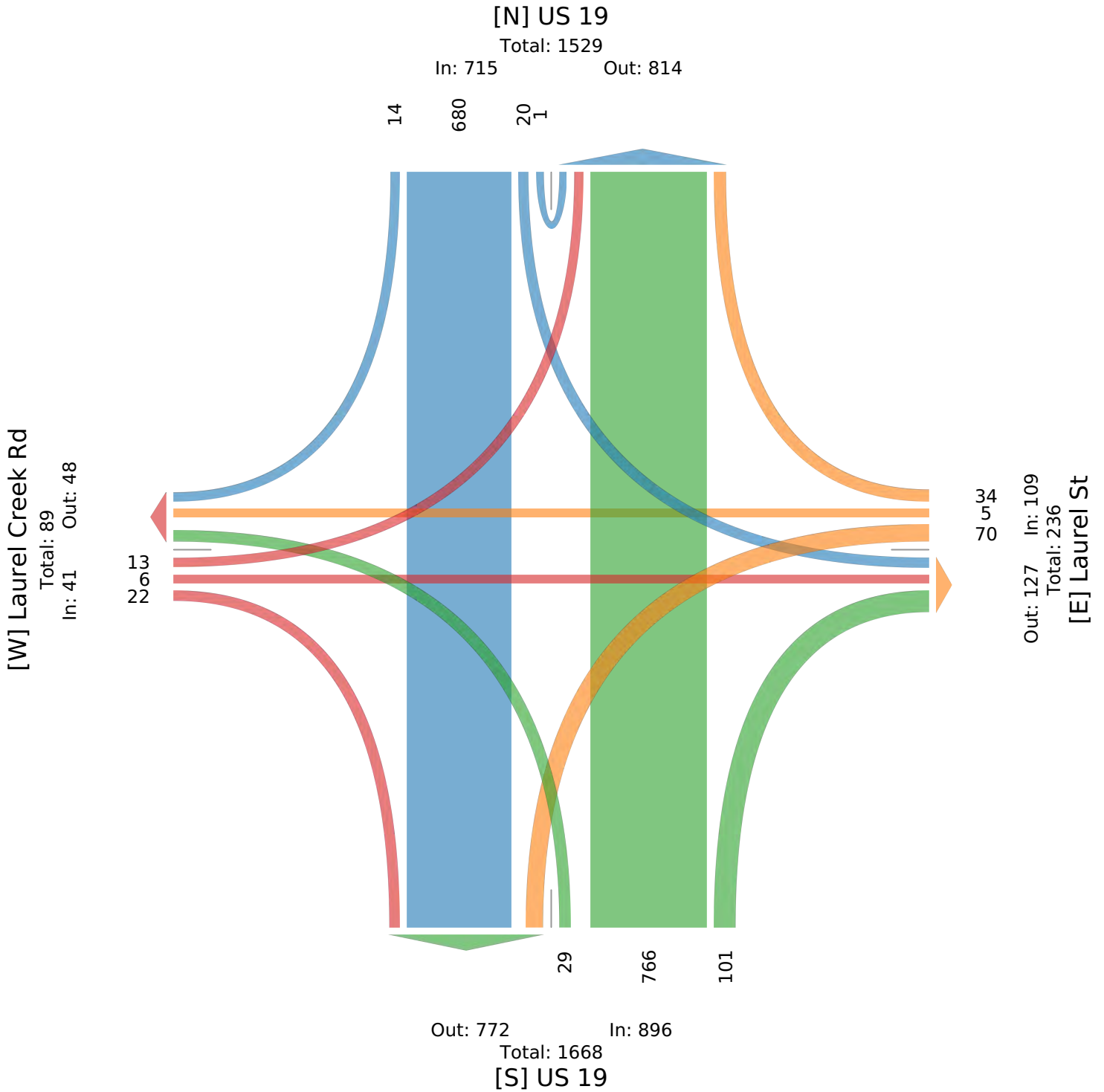
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	US 19 Southbound					Laurel St Westbound					US 19 Northbound					Laurel Creek Rd Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-04-25 4:00PM	4	181	5	0	190	16	4	31	0	51	37	233	8	0	278	12	2	0	0	14	533
4:15PM	1	167	3	0	171	6	5	24	0	35	31	243	10	0	284	6	4	2	0	12	502
4:30PM	7	177	5	0	189	14	8	31	0	53	27	236	10	0	273	7	1	4	0	12	527
4:45PM	4	177	5	0	186	17	2	21	0	40	29	251	8	0	288	9	3	5	0	17	531
Total	16	702	18	0	736	53	19	107	0	179	124	963	36	0	1123	34	10	11	0	55	2093
% Approach	2.2%	95.4%	2.4%	0%	-	29.6%	10.6%	59.8%	0%	-	11.0%	85.8%	3.2%	0%	-	61.8%	18.2%	20.0%	0%	-	-
% Total	0.8%	33.5%	0.9%	0%	35.2%	2.5%	0.9%	5.1%	0%	8.6%	5.9%	46.0%	1.7%	0%	53.7%	1.6%	0.5%	0.5%	0%	2.6%	-
PHF	0.571	0.970	0.900	-	0.968	0.779	0.594	0.863	-	0.844	0.838	0.959	0.900	-	0.975	0.708	0.625	0.550	-	0.809	0.982
Lights	14	645	18	0	677	52	17	106	0	175	119	898	34	0	1051	32	9	11	0	52	1955
% Lights	87.5%	91.9%	100%	0%	92.0%	98.1%	89.5%	99.1%	0%	97.8%	96.0%	93.3%	94.4%	0%	93.6%	94.1%	90.0%	100%	0%	94.5%	93.4%
Articulated Trucks	0	36	0	0	36	0	0	0	0	0	0	51	1	0	52	0	0	0	0	0	88
% Articulated Trucks	0%	5.1%	0%	0%	4.9%	0%	0%	0%	0%	0%	0%	5.3%	2.8%	0%	4.6%	0%	0%	0%	0%	0%	4.2%
Buses and Single-Unit Trucks	2	21	0	0	23	1	2	1	0	4	5	14	1	0	20	2	1	0	0	3	50
% Buses and Single-Unit Trucks	12.5%	3.0%	0%	0%	3.1%	1.9%	10.5%	0.9%	0%	2.2%	4.0%	1.5%	2.8%	0%	1.8%	5.9%	10.0%	0%	0%	5.5%	2.4%

* L: Left, R: Right, T: Thru, U: U-Turn

US 19 & Laurel Creek Rd - TMC

Thu Apr 25, 2024

PM Peak (4 PM - 5 PM) - Overall Peak Hour

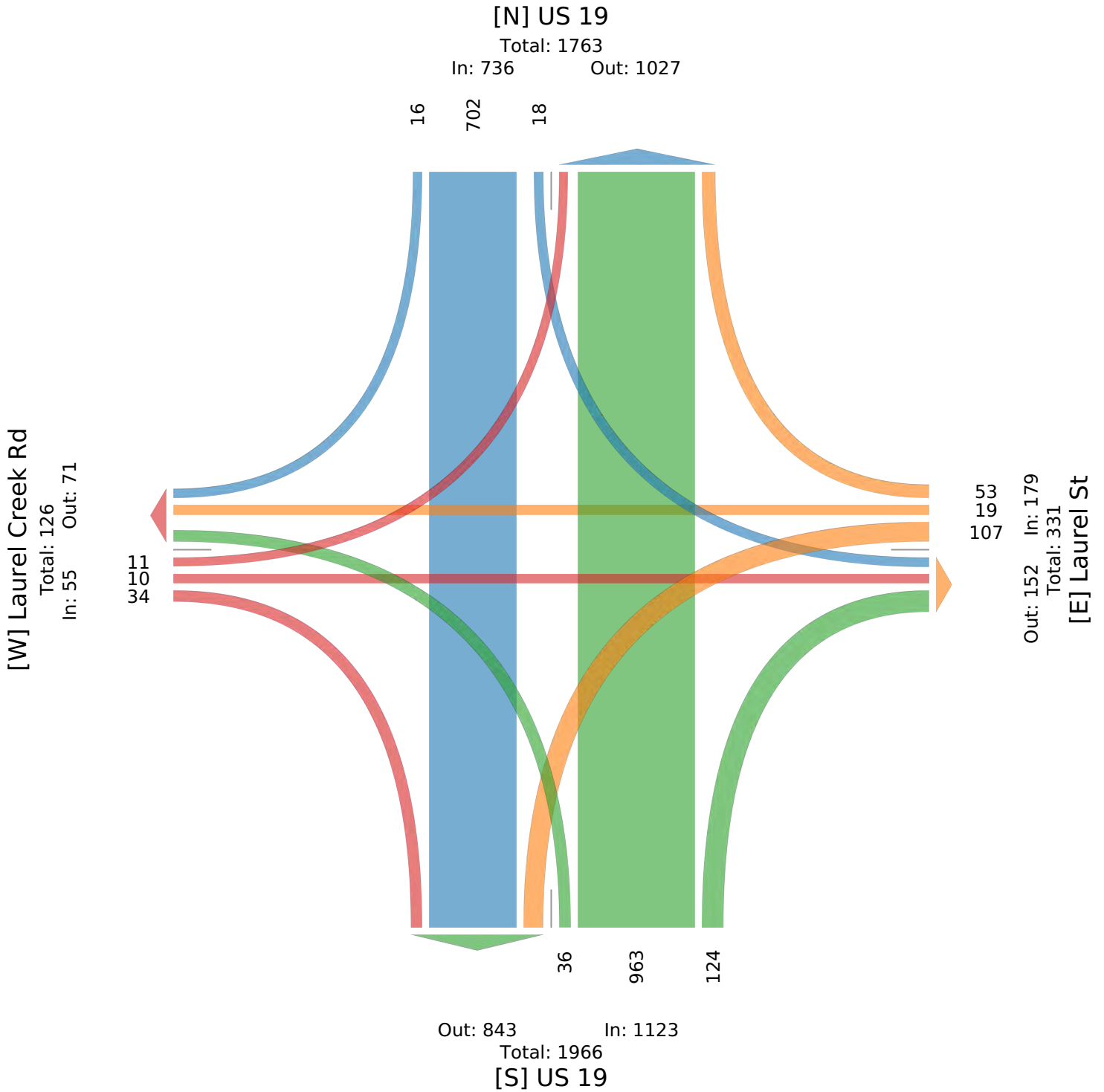
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1182117, Location: 38.049819, -81.118537



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

Full Length (6 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	Maple Ave Southbound					School Driveway Westbound					Maple Ave Northbound					Laurel St Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-04-25 6:00AM	2	3	0	0	5	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	6
6:15AM	5	3	0	0	8	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	11
6:30AM	9	5	2	0	16	0	0	0	0	0	0	0	3	2	5	1	0	2	0	3	24
6:45AM	4	2	1	0	7	0	0	0	0	0	0	0	2	3	5	1	1	2	0	4	16
Hourly Total	20	13	3	0	36	0	0	0	0	0	0	0	6	8	14	2	1	4	0	7	57
7:00AM	5	2	4	0	11	1	1	1	0	3	0	2	3	0	5	1	3	3	0	7	26
7:15AM	6	1	8	0	15	0	1	0	0	1	0	3	2	0	5	1	3	4	0	8	29
7:30AM	6	2	11	0	19	1	2	0	0	3	4	3	0	0	7	1	11	1	0	13	42
7:45AM	3	2	36	0	41	30	42	2	0	74	10	3	1	0	14	3	36	3	0	42	171
Hourly Total	20	7	59	0	86	32	46	3	0	81	14	11	6	0	31	6	53	11	0	70	268
8:00AM	2	3	38	0	43	28	29	8	0	65	12	1	2	0	15	0	23	3	0	26	149
8:15AM	12	4	9	0	25	17	25	6	0	48	8	8	2	0	18	2	13	6	0	21	112
8:30AM	6	2	1	0	9	0	3	1	0	4	3	2	0	0	5	4	1	5	0	10	28
8:45AM	12	8	0	0	20	1	1	2	0	4	0	5	1	0	6	0	0	10	0	10	40
Hourly Total	32	17	48	0	97	46	58	17	0	121	23	16	5	0	44	6	37	24	0	67	329
9:00AM	8	4	1	0	13	0	1	0	0	1	0	7	0	0	7	1	1	8	0	10	31
9:15AM	12	3	2	0	17	3	0	0	0	3	0	5	0	0	5	1	0	6	0	7	32
9:30AM	8	2	1	0	11	1	0	0	0	1	0	2	2	0	4	1	0	6	0	7	23
9:45AM	16	8	4	0	28	1	4	0	0	5	0	6	1	0	7	1	3	9	0	13	53
Hourly Total	44	17	8	0	69	5	5	0	0	10	0	20	3	0	23	4	4	29	0	37	139
10:00AM	10	12	0	0	22	1	3	0	0	4	0	8	3	0	11	2	1	14	0	17	54
10:15AM	13	12	1	0	26	0	0	0	0	0	0	3	2	0	5	2	2	9	0	13	44
10:30AM	19	11	1	0	31	1	3	0	0	4	0	8	1	0	9	2	1	12	0	15	59
10:45AM	13	8	2	0	23	2	0	1	0	3	1	4	1	0	6	1	0	5	0	6	38
Hourly Total	55	43	4	0	102	4	6	1	0	11	1	23	7	0	31	7	4	40	0	51	195
11:00AM	9	7	1	1	18	0	4	0	0	4	0	3	2	0	5	0	0	7	0	7	34
11:15AM	13	8	3	0	24	1	3	0	0	4	0	8	1	0	9	1	4	8	0	13	50
11:30AM	20	14	2	0	36	2	4	0	0	6	0	9	0	0	9	1	2	12	0	15	66
11:45AM	13	8	3	0	24	0	0	0	0	0	0	7	1	0	8	5	2	11	0	18	50
Hourly Total	55	37	9	1	102	3	11	0	0	14	0	27	4	0	31	7	8	38	0	53	200
12:00PM	22	9	1	0	32	0	0	1	0	1	1	5	3	0	9	6	5	9	0	20	62
12:15PM	21	9	0	0	30	2	1	0	0	3	0	8	3	0	11	1	1	18	0	20	64
12:30PM	18	12	2	0	32	0	3	2	0	5	0	12	2	0	14	3	3	15	0	21	72
12:45PM	12	5	2	0	19	1	1	0	0	2	0	7	1	0	8	1	4	11	0	16	45
Hourly Total	73	35	5	0	113	3	5	3	0	11	1	32	9	0	42	11	13	53	0	77	243
1:00PM	19	3	0	0	22	1	1	0	0	2	0	6	2	0	8	1	1	17	0	19	51
1:15PM	10	8	0	0	18	1	2	1	0	4	0	4	1	0	5	5	3	15	0	23	50
1:30PM	16	8	1	0	25	1	2	1	0	4	1	5	0	0	6	1	1	17	0	19	54
1:45PM	17	14	1	0	32	3	1	1	0	5	0	12	0	0	12	4	0	17	0	21	70
Hourly Total	62	33	2	0	97	6	6	3	0	15	1	27	3	0	31	11	5	66	0	82	225
2:00PM	17	7	0	0	24	0	2	0	0	2	0	8	3	0	11	4	3	12	0	19	56
2:15PM	11	17	3	0	31	0	0	1	0	1	0	11	2	0	13	3	1	13	0	17	62
2:30PM	15	4	1	0	20	2	0	0	0	2	0	8	2	0	10	2	6	16	0	24	56
2:45PM	16	12	5	0	33	1	0	0	0	1	2	6	4	0	12	3	0	15	0	18	64
Hourly Total	59	40	9	0	108	3	2	1	0	6	2	33	11	0	46	12	10	56	0	78	238
3:00PM	19	14	11	0	44	1	1	2	0	4	4	10	2	0	16	2	14	18	0	34	98
3:15PM	13	4	4	0	21	5	7	1	0	13	4	5	3	0	12	2	8	11	0	21	67
3:30PM	21	8	4	0	33	20	30	8	0	58	4	4	4	0	12	3	10	14	0	27	130
3:45PM	20	11	1	0	32	11	13	3	0	27	0	10	4	0	14	5	1	20	0	26	99
Hourly Total	73	37	20	0	130	37	51	14	0	102	12	29	13	0	54	12	33	63	0	108	394
4:00PM	29	10	0	0	39	11	5	6	0	22	0	6	5	0	11	5	2	18	0	25	97
4:15PM	27	7	0	0	34	4	2	1	0	7	0	9	7	0	16	3	4	16	0	23	80
4:30PM	28	12	2	0	42	2	2	0	0	4	0	6	3	0	9	5	3	17	0	25	80
4:45PM	15	9	3	0	27	2	1	0	0	3	1	8	5	0	14	3	2	14	0	19	63

Leg Direction	Maple Ave Southbound					School Driveway Westbound					Maple Ave Northbound					Laurel St Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
Hourly Total	99	38	5	0	142	19	10	7	0	36	1	29	20	0	50	16	11	65	0	92	320
5:00PM	23	15	5	0	43	1	1	3	0	5	3	12	2	0	17	4	8	15	0	27	92
5:15PM	13	11	36	0	60	3	3	1	0	7	11	12	6	0	29	1	19	20	0	40	136
5:30PM	13	8	30	0	51	3	3	3	0	9	5	10	3	0	18	4	21	13	0	38	116
5:45PM	8	4	16	0	28	1	2	3	0	6	3	5	3	0	11	1	9	16	0	26	71
Hourly Total	57	38	87	0	182	8	9	10	0	27	22	39	14	0	75	10	57	64	0	131	415
6:00PM	12	9	5	0	26	2	0	0	0	2	0	5	4	0	9	1	3	12	0	16	53
6:15PM	7	3	0	0	10	0	2	0	0	2	0	4	6	0	10	3	1	11	0	15	37
6:30PM	10	4	0	0	14	2	1	1	0	4	0	6	2	0	8	3	1	14	0	18	44
6:45PM	9	6	4	0	19	32	50	19	0	101	0	11	5	0	16	6	0	12	0	18	154
Hourly Total	38	22	9	0	69	36	53	20	0	109	0	26	17	0	43	13	5	49	0	67	288
Total	687	377	268	1	1333	202	262	79	0	543	77	318	120	0	515	117	241	562	0	920	3311
% Approach	51.5%	28.3%	20.1%	0.1%	-	37.2%	48.3%	14.5%	0%	-	15.0%	61.7%	23.3%	0%	-	12.7%	26.2%	61.1%	0%	-	-
% Total	20.7%	11.4%	8.1%	0%	40.3%	6.1%	7.9%	2.4%	0%	16.4%	2.3%	9.6%	3.6%	0%	15.6%	3.5%	7.3%	17.0%	0%	27.8%	-
Lights	674	371	257	1	1303	191	249	76	0	516	77	312	112	0	501	107	225	550	0	882	3202
% Lights	98.1%	98.4%	95.9%	100%	97.7%	94.6%	95.0%	96.2%	0%	95.0%	100%	98.1%	93.3%	0%	97.3%	91.5%	93.4%	97.9%	0%	95.9%	96.7%
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
% Articulated Trucks	0.3%	0%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0.1%	0.1%
Buses and Single-Unit Trucks	11	6	11	0	28	11	13	3	0	27	0	6	8	0	14	10	16	11	0	37	106
% Buses and Single-Unit Trucks	1.6%	1.6%	4.1%	0%	2.1%	5.4%	5.0%	3.8%	0%	5.0%	0%	1.9%	6.7%	0%	2.7%	8.5%	6.6%	2.0%	0%	4.0%	3.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

Full Length (6 AM-7 PM)

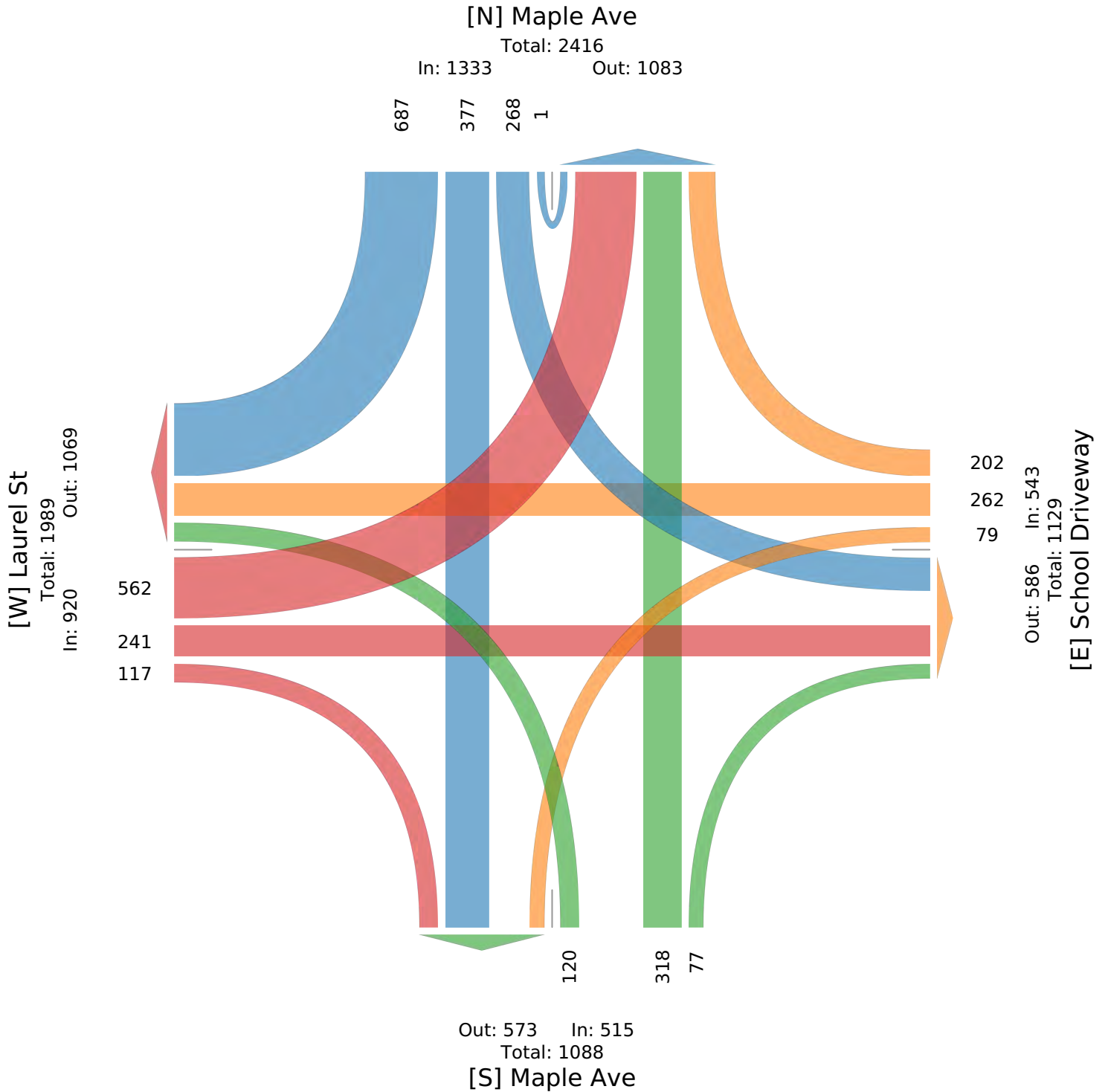
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	Maple Ave Southbound					School Driveway Westbound					Maple Ave Northbound					Laurel St Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2024-04-25 7:30AM	6	2	11	0	19	1	2	0	0	3	4	3	0	0	7	1	11	1	0	13	42
7:45AM	3	2	36	0	41	30	42	2	0	74	10	3	1	0	14	3	36	3	0	42	171
8:00AM	2	3	38	0	43	28	29	8	0	65	12	1	2	0	15	0	23	3	0	26	149
8:15AM	12	4	9	0	25	17	25	6	0	48	8	8	2	0	18	2	13	6	0	21	112
Total	23	11	94	0	128	76	98	16	0	190	34	15	5	0	54	6	83	13	0	102	474
% Approach	18.0%	8.6%	73.4%	0%	-	40.0%	51.6%	8.4%	0%	-	63.0%	27.8%	9.3%	0%	-	5.9%	81.4%	12.7%	0%	-	-
% Total	4.9%	2.3%	19.8%	0%	27.0%	16.0%	20.7%	3.4%	0%	40.1%	7.2%	3.2%	1.1%	0%	11.4%	1.3%	17.5%	2.7%	0%	21.5%	-
PHF	0.479	0.688	0.618	-	0.744	0.633	0.583	0.500	-	0.642	0.708	0.469	0.625	-	0.750	0.500	0.576	0.542	-	0.607	0.693
Lights	22	11	88	0	121	73	92	16	0	181	34	15	4	0	53	5	77	13	0	95	450
% Lights	95.7%	100%	93.6%	0%	94.5%	96.1%	93.9%	100%	0%	95.3%	100%	100%	80.0%	0%	98.1%	83.3%	92.8%	100%	0%	93.1%	94.9%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	1	0	6	0	7	3	6	0	0	9	0	0	1	0	1	1	6	0	0	7	24
% Buses and Single-Unit Trucks	4.3%	0%	6.4%	0%	5.5%	3.9%	6.1%	0%	0%	4.7%	0%	0%	20.0%	0%	1.9%	16.7%	7.2%	0%	0%	6.9%	5.1%

* L: Left, R: Right, T: Thru, U: U-Turn

Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

AM Peak (7:30 AM - 8:30 AM) - Overall Peak Hour

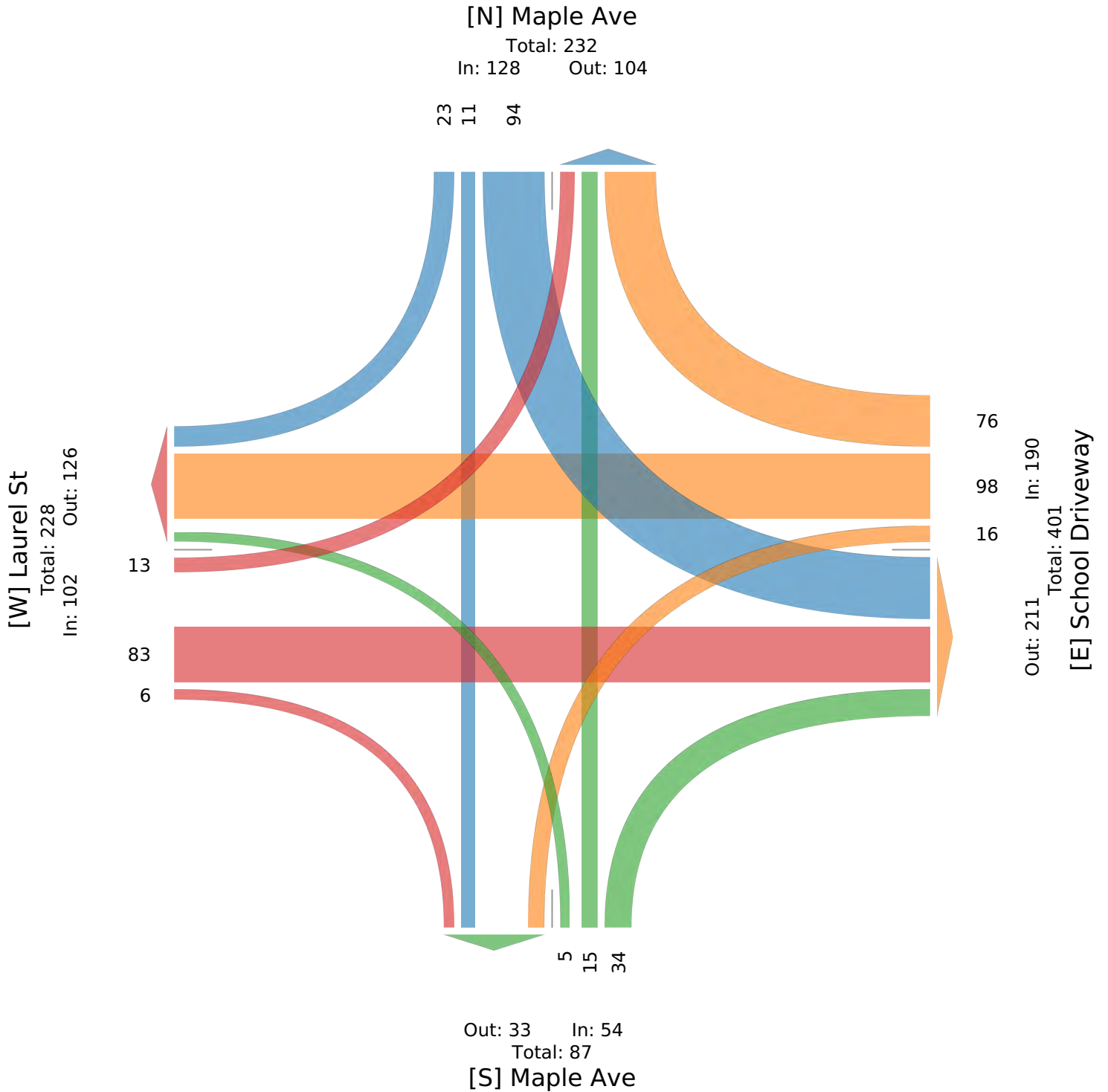
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	Maple Ave Southbound					School Driveway Westbound					Maple Ave Northbound					Laurel St Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-04-25 11:45AM	13	8	3	0	24	0	0	0	0	0	0	7	1	0	8	5	2	11	0	18	50
12:00PM	22	9	1	0	32	0	0	1	0	1	1	5	3	0	9	6	5	9	0	20	62
12:15PM	21	9	0	0	30	2	1	0	0	3	0	8	3	0	11	1	1	18	0	20	64
12:30PM	18	12	2	0	32	0	3	2	0	5	0	12	2	0	14	3	3	15	0	21	72
Total	74	38	6	0	118	2	4	3	0	9	1	32	9	0	42	15	11	53	0	79	248
% Approach	62.7%	32.2%	5.1%	0%	-	22.2%	44.4%	33.3%	0%	-	2.4%	76.2%	21.4%	0%	-	19.0%	13.9%	67.1%	0%	-	-
% Total	29.8%	15.3%	2.4%	0%	47.6%	0.8%	1.6%	1.2%	0%	3.6%	0.4%	12.9%	3.6%	0%	16.9%	6.0%	4.4%	21.4%	0%	31.9%	-
PHF	0.841	0.792	0.500	-	0.922	0.250	0.333	0.375	-	0.450	0.250	0.667	0.750	-	0.750	0.625	0.550	0.736	-	0.940	0.861
Lights	73	37	5	0	115	2	4	2	0	8	1	32	8	0	41	14	11	53	0	78	242
% Lights	98.6%	97.4%	83.3%	0%	97.5%	100%	100%	66.7%	0%	88.9%	100%	100%	88.9%	0%	97.6%	93.3%	100%	100%	0%	98.7%	97.6%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	1	1	1	0	3	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	6
% Buses and Single-Unit Trucks	1.4%	2.6%	16.7%	0%	2.5%	0%	0%	33.3%	0%	11.1%	0%	0%	11.1%	0%	2.4%	6.7%	0%	0%	0%	1.3%	2.4%

* L: Left, R: Right, T: Thru, U: U-Turn

Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

Midday Peak (11:45 AM - 12:45 PM)

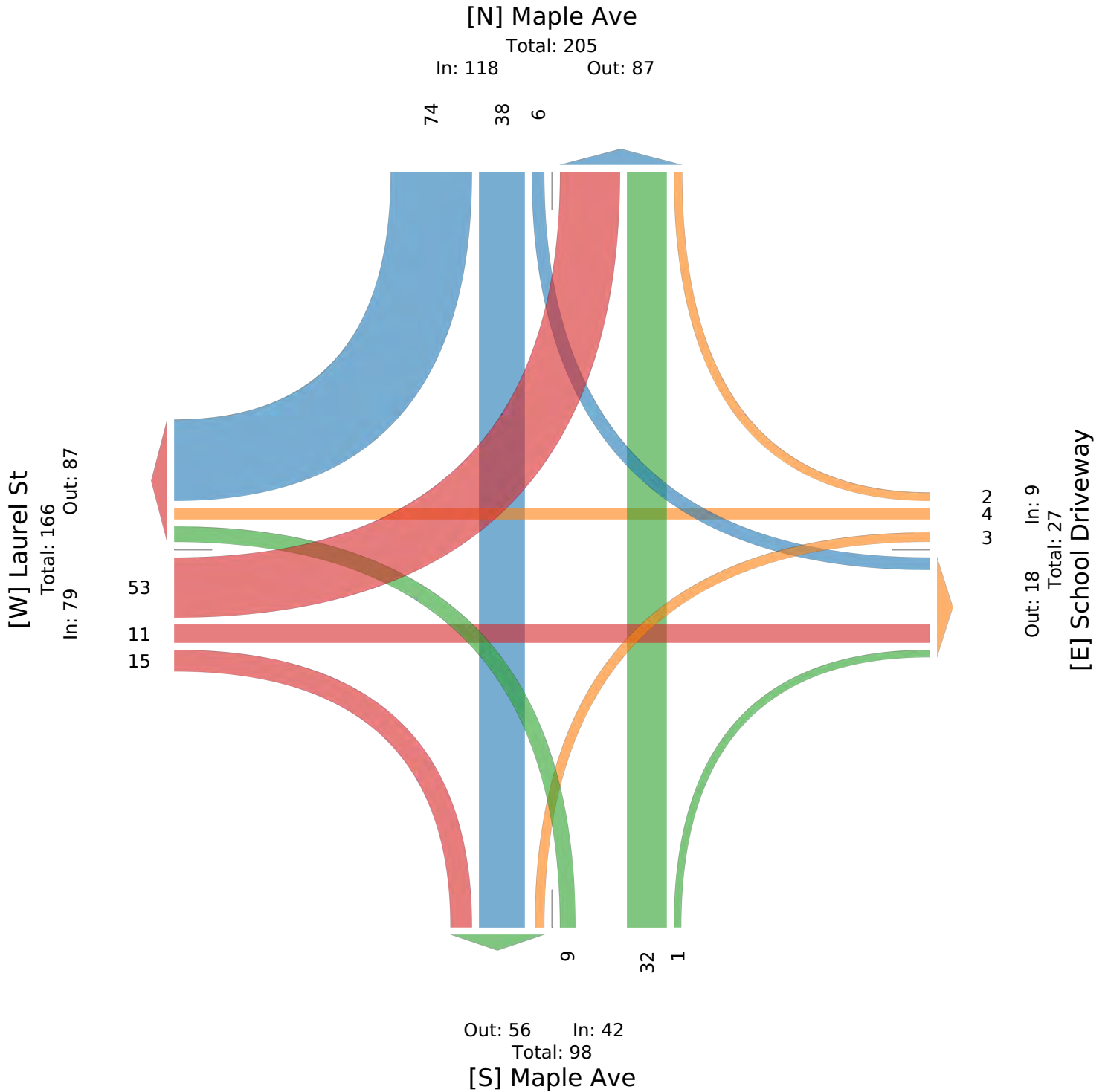
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

PM Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US

Leg Direction	Maple Ave Southbound					School Driveway Westbound					Maple Ave Northbound					Laurel St Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2024-04-25 5:00PM	23	15	5	0	43	1	1	3	0	5	3	12	2	0	17	4	8	15	0	27	92
5:15PM	13	11	36	0	60	3	3	1	0	7	11	12	6	0	29	1	19	20	0	40	136
5:30PM	13	8	30	0	51	3	3	3	0	9	5	10	3	0	18	4	21	13	0	38	116
5:45PM	8	4	16	0	28	1	2	3	0	6	3	5	3	0	11	1	9	16	0	26	71
Total	57	38	87	0	182	8	9	10	0	27	22	39	14	0	75	10	57	64	0	131	415
% Approach	31.3%	20.9%	47.8%	0%	-	29.6%	33.3%	37.0%	0%	-	29.3%	52.0%	18.7%	0%	-	7.6%	43.5%	48.9%	0%	-	-
% Total	13.7%	9.2%	21.0%	0%	43.9%	1.9%	2.2%	2.4%	0%	6.5%	5.3%	9.4%	3.4%	0%	18.1%	2.4%	13.7%	15.4%	0%	31.6%	-
PHF	0.620	0.633	0.604	-	0.758	0.667	0.750	0.833	-	0.750	0.500	0.813	0.583	-	0.647	0.625	0.679	0.800	-	0.819	0.763
Lights	56	37	87	0	180	8	9	10	0	27	22	39	13	0	74	9	57	63	0	129	410
% Lights	98.2%	97.4%	100%	0%	98.9%	100%	100%	100%	0%	100%	100%	100%	92.9%	0%	98.7%	90.0%	100%	98.4%	0%	98.5%	98.8%
Articulated Trucks	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	1.8%	0%	0%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%
Buses and Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	4
% Buses and Single-Unit Trucks	0%	2.6%	0%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	7.1%	0%	1.3%	10.0%	0%	1.6%	0%	1.5%	1.0%

* L: Left, R: Right, T: Thru, U: U-Turn

Laurel St & Maple Ave - TMC

Thu Apr 25, 2024

PM Peak (5 PM - 6 PM)

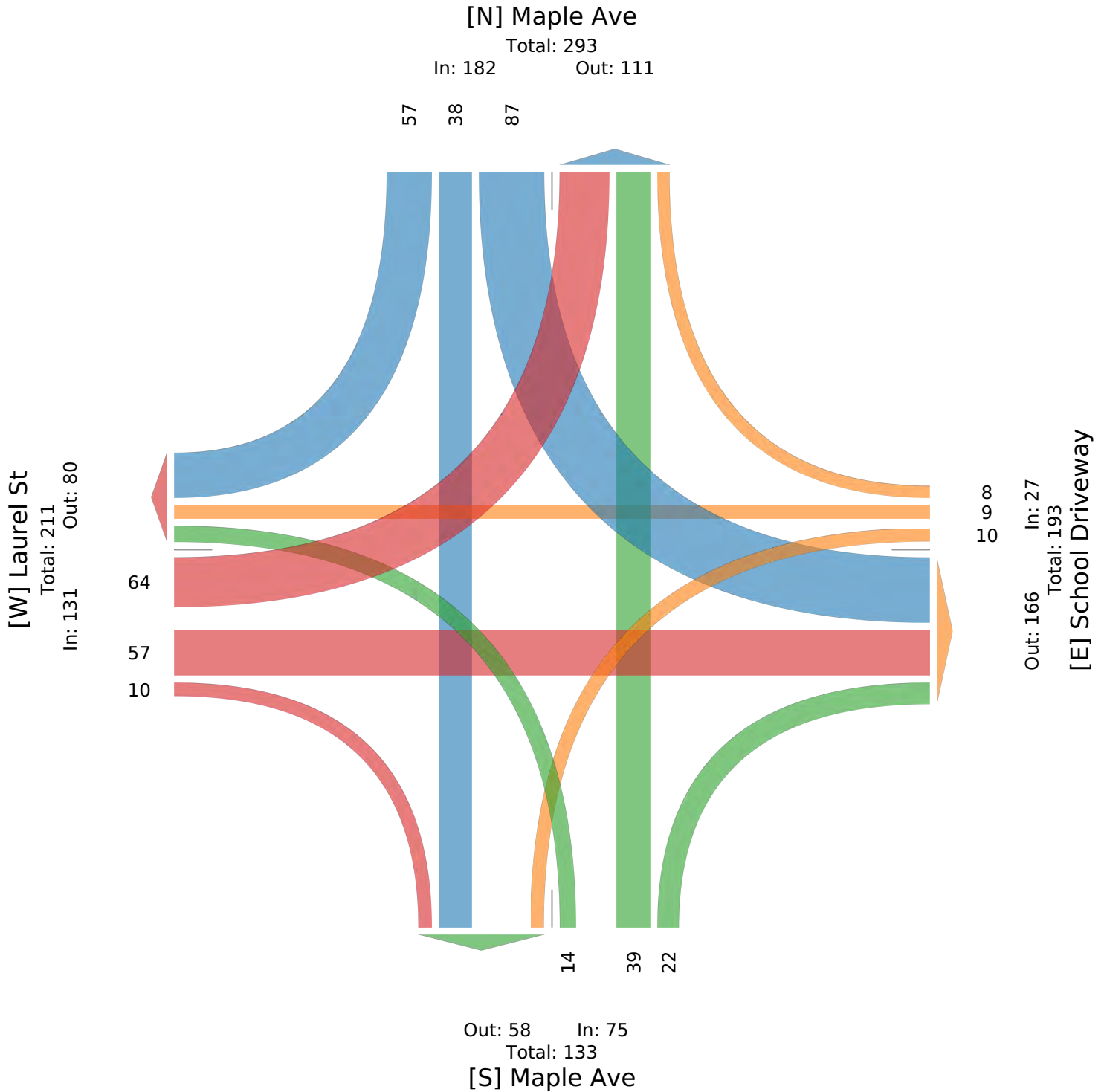
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 1181622, Location: 38.04647, -81.113554



Provided by: Burgess & Niple : West Virginia
4424 Emerson Ave, Parkersburg, WV, 26104, US



Appendix B:

HCS Analysis Output

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	70	170	60	148	163	45	94	211	225	26
Average Queue (ft)	28	70	13	65	68	12	25	108	113	4
95th Queue (ft)	62	130	40	122	132	33	65	176	189	17
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				1				7	0	
Queuing Penalty (veh)				0				2	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	93	152	28	53
Average Queue (ft)	48	63	2	11
95th Queue (ft)	80	117	12	40
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 3

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	110	10	30	20	550	80	30	680	10
Future Volume (veh/h)	20	10	20	110	10	30	20	550	80	30	680	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	118	11	32	22	591	86	32	731	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	172	90	113	287	35	52	210	1318	588	153	1219	544
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.13	0.40	0.40	0.09	0.37	0.37
Sat Flow, veh/h	452	513	643	982	199	293	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	161	0	0	22	591	86	32	731	11
Grp Sat Flow(s),veh/h/ln	1608	0	0	1474	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	3.8	0.0	0.0	0.6	7.2	2.0	1.0	9.7	0.3
Cycle Q Clear(g_c), s	1.5	0.0	0.0	5.3	0.0	0.0	0.6	7.2	2.0	1.0	9.7	0.3
Prop In Lane	0.40		0.40	0.73		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	0	0	374	0	0	210	1318	588	153	1219	544
V/C Ratio(X)	0.15	0.00	0.00	0.43	0.00	0.00	0.10	0.45	0.15	0.21	0.60	0.02
Avail Cap(c_a), veh/h	601	0	0	591	0	0	210	1318	588	214	1341	598
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	0.0	20.6	0.0	0.0	21.0	11.9	10.4	23.0	14.1	11.1
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	0.0	1.0	1.1	0.5	0.7	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.8	0.0	0.0	0.3	2.4	0.6	0.4	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	0.0	0.0	21.4	0.0	0.0	22.0	13.0	10.9	23.7	14.7	11.1
LnGrp LOS	B			C			C	B	B	C	B	B
Approach Vol, veh/h	55		161				699			774		
Approach Delay, s/veh	19.3		21.4				13.0			15.0		
Approach LOS	B		C				B			B		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	11.0	28.0	15.6		13.0	26.0	15.6					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	22.0	18.0		7.0	22.0	18.0					
Max Q Clear Time (g_c+I1), s	3.0	9.2	3.5		2.6	11.7	7.3					
Green Ext Time (p_c), s	0.0	3.6	0.2		0.0	3.7	0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh			14.9									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	13.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	90	10	20	120	80	10	10	30	80	10	20
Future Vol, veh/h	20	90	10	20	120	80	10	10	30	80	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	134	15	30	179	119	15	15	45	119	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	403	358	30	388	351	37	45	0	0	60	0	0
Stage 1	269	269	-	67	67	-	-	-	-	-	-	-
Stage 2	134	90	-	321	284	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	551	562	1033	565	569	1026	1563	-	-	1519	-	-
Stage 1	728	680	-	936	833	-	-	-	-	-	-	-
Stage 2	859	813	-	685	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	299	511	1033	383	518	1026	1563	-	-	1519	-	-
Mov Cap-2 Maneuver	299	511	-	383	518	-	-	-	-	-	-	-
Stage 1	669	625	-	926	825	-	-	-	-	-	-	-
Stage 2	589	805	-	487	617	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v17.09			17.67		1.46		5.51	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	475	608	1155	-	-
HCM Lane V/C Ratio	0.01	-	-	0.377	0.54	0.079	-	-
HCM Control Delay (s/veh)	7.3	0	-	17.1	17.7	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	3.2	0.3	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB	
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R	
Maximum Queue (ft)	69	176	57	214	225	42	142	226	234	36	
Average Queue (ft)	25	88	14	112	111	12	31	135	136	7	
95th Queue (ft)	59	151	43	187	192	33	98	205	216	25	
Link Distance (ft)	1729	1812		1906	1906			1835	1835		
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			110			275	100			300	
Storage Blk Time (%)				6	0			0	14		
Queuing Penalty (veh)				2	0			1	4		

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	89	112	34	26
Average Queue (ft)	46	48	4	1
95th Queue (ft)	77	84	22	11
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

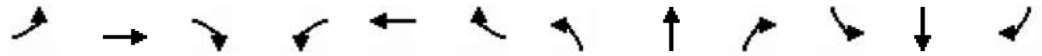
Network Summary

Network wide Queuing Penalty: 7

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	120	10	50	30	960	90	30	700	20
Future Volume (veh/h)	10	10	30	120	10	50	30	960	90	30	700	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	125	10	52	31	1000	94	31	729	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	89	80	162	238	20	65	468	1789	798	78	1010	451
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.28	0.53	0.53	0.05	0.30	0.30
Sat Flow, veh/h	157	509	1031	947	129	415	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	187	0	0	31	1000	94	31	729	21
Grp Sat Flow(s),veh/h/ln	1697	0	0	1491	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	6.2	0.0	0.0	0.9	13.2	2.1	1.2	12.9	0.7
Cycle Q Clear(g_c), s	1.8	0.0	0.0	8.0	0.0	0.0	0.9	13.2	2.1	1.2	12.9	0.7
Prop In Lane	0.20		0.61	0.67		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	331	0	0	324	0	0	468	1789	798	78	1010	451
V/C Ratio(X)	0.15	0.00	0.00	0.58	0.00	0.00	0.07	0.56	0.12	0.40	0.72	0.05
Avail Cap(c_a), veh/h	544	0	0	518	0	0	468	1789	798	177	1304	581
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	27.0	0.0	0.0	17.9	10.6	7.9	31.1	21.0	16.7
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.6	0.0	0.0	0.3	1.3	0.3	3.3	1.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.9	0.0	0.0	0.4	4.5	0.7	0.5	4.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.8	0.0	0.0	28.6	0.0	0.0	18.2	11.8	8.2	34.3	22.4	16.8
LnGrp LOS	C			C			B	B	A	C	C	B
Approach Vol, veh/h		51			187			1125			781	
Approach Delay, s/veh		24.8			28.6			11.7			22.7	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	41.4		16.5	24.5	26.0		16.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	35.4		19.6	16.6	25.8		19.6				
Max Q Clear Time (g_c+I1), s	3.2	15.2		3.8	2.9	14.9		10.0				
Green Ext Time (p_c), s	0.0	7.7		0.2	0.0	3.8		0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				17.5								
HCM 7th LOS				B								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	20	20	20	70	50	20	30	10	10	30	90
Future Vol, veh/h	90	20	20	20	70	50	20	30	10	10	30	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	26	26	26	92	66	26	39	13	13	39	118

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	263	230	99	178	283	46	158	0	0	53	0	0
Stage 1	125	125	-	99	99	-	-	-	-	-	-	-
Stage 2	138	105	-	79	184	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	684	664	949	773	618	1009	1398	-	-	1560	-	-
Stage 1	872	787	-	896	804	-	-	-	-	-	-	-
Stage 2	858	802	-	917	738	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	528	645	949	702	600	1009	1398	-	-	1560	-	-
Mov Cap-2 Maneuver	528	645	-	702	600	-	-	-	-	-	-	-
Stage 1	864	779	-	878	788	-	-	-	-	-	-	-
Stage 2	694	787	-	854	731	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	13.7		11.72		2.54		0.56	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	571	-	-	584	719	120	-	-
HCM Lane V/C Ratio	0.019	-	-	0.293	0.256	0.008	-	-
HCM Control Delay (s/veh)	7.6	0	-	13.7	11.7	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1	0	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	77	175	55	146	167	68	91	227	221	36
Average Queue (ft)	29	82	13	66	65	14	25	132	139	5
95th Queue (ft)	66	140	40	117	132	42	67	203	214	21
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				1				15		
Queuing Penalty (veh)				0				5		

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	140	29	47
Average Queue (ft)	47	64	2	9
95th Queue (ft)	75	109	14	34
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 5

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↕	↗	↖	↕	↖
Traffic Volume (veh/h)	20	10	20	110	10	30	20	570	80	30	700	10
Future Volume (veh/h)	20	10	20	110	10	30	20	570	80	30	700	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	118	11	32	22	613	86	32	753	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	141	74	95	241	21	43	488	1788	798	78	983	439
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.30	0.55	0.55	0.05	0.30	0.30
Sat Flow, veh/h	471	517	658	1045	149	296	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	161	0	0	22	613	86	32	753	11
Grp Sat Flow(s),veh/h/ln	1646	0	0	1489	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	5.0	0.0	0.0	0.7	7.2	1.9	1.3	14.1	0.4
Cycle Q Clear(g_c), s	2.0	0.0	0.0	6.9	0.0	0.0	0.7	7.2	1.9	1.3	14.1	0.4
Prop In Lane	0.40		0.40	0.73		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	0	0	305	0	0	488	1788	798	78	983	439
V/C Ratio(X)	0.18	0.00	0.00	0.53	0.00	0.00	0.05	0.34	0.11	0.41	0.77	0.03
Avail Cap(c_a), veh/h	477	0	0	466	0	0	488	1788	798	171	1357	605
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	27.9	0.0	0.0	17.1	8.7	7.5	31.7	21.9	17.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.4	0.0	0.0	0.2	0.5	0.3	3.5	1.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.5	0.0	0.0	0.3	2.3	0.6	0.6	5.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.2	0.0	0.0	29.3	0.0	0.0	17.3	9.2	7.7	35.2	23.7	17.1
LnGrp LOS	C			C			B	A	A	D	C	B
Approach Vol, veh/h		55			161			721				796
Approach Delay, s/veh		26.2			29.3			9.3				24.1
Approach LOS		C			C			A				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	43.4		15.8	26.4	26.2		15.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	37.4		17.6	16.5	27.9		17.6				
Max Q Clear Time (g_c+I1), s	3.3	9.2		4.0	2.7	16.1		8.9				
Green Ext Time (p_c), s	0.0	4.9		0.2	0.0	4.1		0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh				18.5								
HCM 7th LOS				B								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	13.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	90	10	20	120	80	10	10	30	80	10	20
Future Vol, veh/h	20	90	10	20	120	80	10	10	30	80	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	134	15	30	179	119	15	15	45	119	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	403	358	30	388	351	37	45	0	0	60	0	0
Stage 1	269	269	-	67	67	-	-	-	-	-	-	-
Stage 2	134	90	-	321	284	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	551	562	1033	565	569	1026	1563	-	-	1519	-	-
Stage 1	728	680	-	936	833	-	-	-	-	-	-	-
Stage 2	859	813	-	685	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	299	511	1033	383	518	1026	1563	-	-	1519	-	-
Mov Cap-2 Maneuver	299	511	-	383	518	-	-	-	-	-	-	-
Stage 1	669	625	-	926	825	-	-	-	-	-	-	-
Stage 2	589	805	-	487	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v17.09		17.67	1.46	5.51
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	475	608	1155	-	-
HCM Lane V/C Ratio	0.01	-	-	0.377	0.54	0.079	-	-
HCM Control Delay (s/veh)	7.3	0	-	17.1	17.7	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	3.2	0.3	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB	
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R	
Maximum Queue (ft)	88	196	95	220	221	58	115	229	246	39	
Average Queue (ft)	28	85	16	114	121	14	27	132	134	7	
95th Queue (ft)	64	151	56	194	208	38	72	201	210	25	
Link Distance (ft)	1729	1812		1906	1906			1835	1835		
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			110			275	100			300	
Storage Blk Time (%)				7				0	14		
Queuing Penalty (veh)				2				0	4		

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	97	84	45	27
Average Queue (ft)	47	44	5	2
95th Queue (ft)	79	73	27	14
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 7

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	120	10	50	30	990	90	30	720	20
Future Volume (veh/h)	10	10	30	120	10	50	30	990	90	30	720	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	125	10	52	31	1031	94	31	750	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	88	80	161	237	20	65	479	1801	803	78	1000	446
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.28	0.53	0.53	0.05	0.30	0.30
Sat Flow, veh/h	158	508	1032	949	128	415	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	187	0	0	31	1031	94	31	750	21
Grp Sat Flow(s),veh/h/ln	1698	0	0	1491	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	0.9	13.9	2.1	1.2	13.6	0.7
Cycle Q Clear(g_c), s	1.8	0.0	0.0	8.1	0.0	0.0	0.9	13.9	2.1	1.2	13.6	0.7
Prop In Lane	0.20		0.61	0.67		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	0	0	322	0	0	479	1801	803	78	1000	446
V/C Ratio(X)	0.15	0.00	0.00	0.58	0.00	0.00	0.06	0.57	0.12	0.40	0.75	0.05
Avail Cap(c_a), veh/h	525	0	0	500	0	0	479	1801	803	175	1325	591
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	0.0	27.3	0.0	0.0	17.8	10.7	7.9	31.4	21.6	17.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.7	0.0	0.0	0.3	1.3	0.3	3.3	1.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	2.9	0.0	0.0	0.4	4.7	0.7	0.5	5.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	0.0	0.0	29.0	0.0	0.0	18.0	12.0	8.2	34.7	23.3	17.1
LnGrp LOS	C			C			B	B	A	C	C	B
Approach Vol, veh/h	51		187				1156			802		
Approach Delay, s/veh	25.0		29.0				11.8			23.5		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.1	42.0	16.6		25.1	26.0	16.6					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	36.0	19.0		16.5	26.5	19.0					
Max Q Clear Time (g_c+I1), s	3.2	15.9	3.8		2.9	15.6	10.1					
Green Ext Time (p_c), s	0.0	8.0	0.2		0.0	3.9	0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh			17.9									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	20	20	20	70	50	20	30	10	10	30	90
Future Vol, veh/h	90	20	20	20	70	50	20	30	10	10	30	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	26	26	26	92	66	26	39	13	13	39	118

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	263	230	99	178	283	46	158	0	0	53	0	0
Stage 1	125	125	-	99	99	-	-	-	-	-	-	-
Stage 2	138	105	-	79	184	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	684	664	949	773	618	1009	1398	-	-	1560	-	-
Stage 1	872	787	-	896	804	-	-	-	-	-	-	-
Stage 2	858	802	-	917	738	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	528	645	949	702	600	1009	1398	-	-	1560	-	-
Mov Cap-2 Maneuver	528	645	-	702	600	-	-	-	-	-	-	-
Stage 1	864	779	-	878	788	-	-	-	-	-	-	-
Stage 2	694	787	-	854	731	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	13.7		11.72		2.54		0.56	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	571	-	-	584	719	120	-	-
HCM Lane V/C Ratio	0.019	-	-	0.293	0.256	0.008	-	-
HCM Control Delay (s/veh)	7.6	0	-	13.7	11.7	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	1	0	-	-

Queuing and Blocking Report
Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	90	178	48	164	161	68	198	257	276	32
Average Queue (ft)	28	83	10	69	67	16	31	152	156	4
95th Queue (ft)	67	145	33	126	130	44	100	230	236	21
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				1			0	18	0	
Queuing Penalty (veh)				0			0	6	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	111	141	18	67
Average Queue (ft)	53	67	2	10
95th Queue (ft)	87	118	12	41
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 6

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	120	10	30	20	600	90	30	740	10
Future Volume (veh/h)	20	10	20	120	10	30	20	600	90	30	740	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	129	11	32	22	645	97	32	796	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	143	75	96	251	18	40	464	1779	793	78	1023	456
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.28	0.54	0.54	0.05	0.31	0.31
Sat Flow, veh/h	471	516	658	1088	121	276	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	172	0	0	22	645	97	32	796	11
Grp Sat Flow(s),veh/h/ln	1645	0	0	1485	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	5.5	0.0	0.0	0.7	7.6	2.2	1.3	14.8	0.4
Cycle Q Clear(g_c), s	2.0	0.0	0.0	7.5	0.0	0.0	0.7	7.6	2.2	1.3	14.8	0.4
Prop In Lane	0.40		0.40	0.75		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	0	0	308	0	0	464	1779	793	78	1023	456
V/C Ratio(X)	0.18	0.00	0.00	0.56	0.00	0.00	0.05	0.36	0.12	0.41	0.78	0.02
Avail Cap(c_a), veh/h	488	0	0	477	0	0	464	1779	793	172	1345	600
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	27.9	0.0	0.0	17.7	8.8	7.6	31.5	21.5	16.4
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.6	0.0	0.0	0.2	0.6	0.3	3.4	2.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.7	0.0	0.0	0.3	2.4	0.7	0.6	5.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.0	0.0	0.0	29.5	0.0	0.0	17.9	9.4	7.9	35.0	23.6	16.5
LnGrp LOS	C			C			B	A	A	C	C	B
Approach Vol, veh/h	55		172				764			839		
Approach Delay, s/veh	26.0		29.5				9.5			24.0		
Approach LOS	C		C				A			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.2	43.0	15.9		25.2	26.9	15.9					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	37.0	18.0		16.5	27.5	18.0					
Max Q Clear Time (g_c+I1), s	3.3	9.6	4.0		2.7	16.8	9.5					
Green Ext Time (p_c), s	0.0	5.2	0.2		0.0	4.1	0.5					
Intersection Summary												
HCM 7th Control Delay, s/veh			18.5									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	14.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	100	10	20	130	80	10	10	30	80	10	20
Future Vol, veh/h	20	100	10	20	130	80	10	10	30	80	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	149	15	30	194	119	15	15	45	119	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	410	358	30	396	351	37	45	0	0	60	0	0
Stage 1	269	269	-	67	67	-	-	-	-	-	-	-
Stage 2	142	90	-	328	284	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	545	562	1033	559	569	1026	1563	-	-	1519	-	-
Stage 1	728	680	-	936	833	-	-	-	-	-	-	-
Stage 2	852	813	-	678	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	283	511	1033	365	518	1026	1563	-	-	1519	-	-
Mov Cap-2 Maneuver	283	511	-	365	518	-	-	-	-	-	-	-
Stage 1	669	625	-	926	825	-	-	-	-	-	-	-
Stage 2	570	805	-	468	617	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	17.88		18.76		1.46		5.51	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	471	599	1155	-	-
HCM Lane V/C Ratio	0.01	-	-	0.412	0.573	0.079	-	-
HCM Control Delay (s/veh)	7.3	0	-	17.9	18.8	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	3.6	0.3	-	-

Queuing and Blocking Report
Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	81	182	53	225	227	77	148	249	248	52
Average Queue (ft)	26	92	13	108	113	18	31	147	152	8
95th Queue (ft)	59	161	40	185	201	49	95	223	226	31
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				6	0			0	17	0
Queuing Penalty (veh)				2	0			1	5	0

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	107	89	34	23
Average Queue (ft)	51	46	4	2
95th Queue (ft)	86	76	21	13
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 9

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	130	10	50	30	1050	100	30	760	20
Future Volume (veh/h)	10	10	30	130	10	50	30	1050	100	30	760	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	135	10	52	31	1094	104	31	792	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	89	82	168	247	18	64	470	1804	805	77	1020	455
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.28	0.53	0.53	0.05	0.30	0.30
Sat Flow, veh/h	164	505	1037	981	113	392	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	197	0	0	31	1094	104	31	792	21
Grp Sat Flow(s),veh/h/ln	1706	0	0	1485	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	7.0	0.0	0.0	0.9	15.5	2.4	1.2	14.8	0.7
Cycle Q Clear(g_c), s	1.8	0.0	0.0	8.8	0.0	0.0	0.9	15.5	2.4	1.2	14.8	0.7
Prop In Lane	0.20		0.61	0.69		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	0	0	328	0	0	470	1804	805	77	1020	455
V/C Ratio(X)	0.15	0.00	0.00	0.60	0.00	0.00	0.07	0.61	0.13	0.40	0.78	0.05
Avail Cap(c_a), veh/h	492	0	0	467	0	0	470	1804	805	171	1341	598
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	0.0	27.9	0.0	0.0	18.5	11.2	8.1	32.2	22.1	17.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.8	0.0	0.0	0.3	1.5	0.3	3.4	2.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.2	0.0	0.0	0.4	5.3	0.8	0.6	5.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.3	0.0	0.0	29.6	0.0	0.0	18.8	12.7	8.5	35.6	24.3	17.2
LnGrp LOS	C			C			B	B	A	D	C	B
Approach Vol, veh/h	51		197				1229			844		
Approach Delay, s/veh	25.3		29.6				12.5			24.5		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.1	43.0	17.3		25.2	26.9	17.3					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	37.0	18.0		16.5	27.5	18.0					
Max Q Clear Time (g_c+I1), s	3.2	17.5	3.8		2.9	16.8	10.8					
Green Ext Time (p_c), s	0.0	8.5	0.1		0.0	4.1	0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh			18.6									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	20	20	20	70	50	20	30	10	10	30	100
Future Vol, veh/h	100	20	20	20	70	50	20	30	10	10	30	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	132	26	26	26	92	66	26	39	13	13	39	132

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	270	237	105	178	296	46	171	0	0	53	0	0
Stage 1	132	132	-	99	99	-	-	-	-	-	-	-
Stage 2	138	105	-	79	197	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	677	659	941	773	607	1009	1382	-	-	1560	-	-
Stage 1	865	782	-	896	804	-	-	-	-	-	-	-
Stage 2	858	802	-	917	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	521	640	941	701	590	1009	1382	-	-	1560	-	-
Mov Cap-2 Maneuver	521	640	-	701	590	-	-	-	-	-	-	-
Stage 1	857	774	-	878	788	-	-	-	-	-	-	-
Stage 2	694	787	-	853	721	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v14.24			11.82		2.55		0.52	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	571	-	-	572	711	111	-	-
HCM Lane V/C Ratio	0.019	-	-	0.322	0.259	0.008	-	-
HCM Control Delay (s/veh)	7.7	0	-	14.2	11.8	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	1	0	-	-

Queuing and Blocking Report
Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	82	184	49	155	148	62	145	233	237	43
Average Queue (ft)	34	88	11	67	63	15	31	133	137	5
95th Queue (ft)	73	149	35	124	128	42	85	203	211	22
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				1			0	15	0	
Queuing Penalty (veh)				0			0	5	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	115	137	18	68
Average Queue (ft)	52	69	1	11
95th Queue (ft)	92	116	9	43
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 5

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	120	10	40	20	550	90	30	680	10
Future Volume (veh/h)	20	10	20	120	10	40	20	550	90	30	680	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	129	11	43	22	591	97	32	731	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	147	78	100	246	20	54	465	1744	778	78	985	440
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.28	0.53	0.53	0.05	0.30	0.30
Sat Flow, veh/h	472	506	652	1010	128	349	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	183	0	0	22	591	97	32	731	11
Grp Sat Flow(s),veh/h/ln	1629	0	0	1487	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	6.0	0.0	0.0	0.7	7.0	2.2	1.3	13.4	0.4
Cycle Q Clear(g_c), s	1.9	0.0	0.0	7.9	0.0	0.0	0.7	7.0	2.2	1.3	13.4	0.4
Prop In Lane	0.40		0.40	0.70		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	0	320	0	0	465	1744	778	78	985	440
V/C Ratio(X)	0.17	0.00	0.00	0.57	0.00	0.00	0.05	0.34	0.12	0.41	0.74	0.03
Avail Cap(c_a), veh/h	512	0	0	501	0	0	465	1744	778	173	1306	582
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	0.0	27.4	0.0	0.0	17.6	9.0	7.9	31.3	21.4	16.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.6	0.0	0.0	0.2	0.5	0.3	3.4	1.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.8	0.0	0.0	0.3	2.2	0.7	0.6	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.2	0.0	0.0	29.0	0.0	0.0	17.8	9.5	8.2	34.7	23.1	16.9
LnGrp LOS	C			C			B	A	A	C	C	B
Approach Vol, veh/h	55		183				710			774		
Approach Delay, s/veh	25.2		29.0				9.6			23.4		
Approach LOS	C		C				A			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.2	42.0	16.4		25.2	26.0	16.4					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	36.0	19.0		16.5	26.5	19.0					
Max Q Clear Time (g_c+I1), s	3.3	9.0	3.9		2.7	15.4	9.9					
Green Ext Time (p_c), s	0.0	4.7	0.2		0.0	3.9	0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh			18.4									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	14.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	100	10	20	140	90	10	10	30	80	10	20
Future Vol, veh/h	20	100	10	20	140	90	10	10	30	80	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	149	15	30	209	134	15	15	45	119	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	418	358	30	396	351	37	45	0	0	60	0	0
Stage 1	269	269	-	67	67	-	-	-	-	-	-	-
Stage 2	149	90	-	328	284	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	538	562	1033	559	569	1026	1563	-	-	1519	-	-
Stage 1	728	680	-	936	833	-	-	-	-	-	-	-
Stage 2	844	813	-	678	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	264	511	1033	365	518	1026	1563	-	-	1519	-	-
Mov Cap-2 Maneuver	264	511	-	365	518	-	-	-	-	-	-	-
Stage 1	669	625	-	926	825	-	-	-	-	-	-	-
Stage 2	542	805	-	468	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	18.3	20.03	1.46	5.51
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	462	605	1155	-	-
HCM Lane V/C Ratio	0.01	-	-	0.42	0.616	0.079	-	-
HCM Control Delay (s/veh)	7.3	0	-	18.3	20	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	4.2	0.3	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	88	219	152	259	248	55	125	246	255	41
Average Queue (ft)	28	93	17	110	113	14	30	139	144	9
95th Queue (ft)	60	164	66	194	205	37	84	215	228	29
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)			0	7	0		0	16	0	
Queuing Penalty (veh)			0	2	0		0	5	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	88	106	35	34
Average Queue (ft)	49	52	4	3
95th Queue (ft)	78	89	22	17
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 7

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	130	10	50	30	960	100	30	700	20
Future Volume (veh/h)	10	10	30	130	10	50	30	960	100	30	700	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	135	10	52	31	1000	104	31	729	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	91	83	171	252	19	65	451	1758	784	78	1013	452
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.27	0.52	0.52	0.05	0.30	0.30
Sat Flow, veh/h	161	505	1033	975	118	392	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	197	0	0	31	1000	104	31	729	21
Grp Sat Flow(s),veh/h/ln	1700	0	0	1484	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	6.7	0.0	0.0	0.9	13.5	2.4	1.2	12.8	0.7
Cycle Q Clear(g_c), s	1.7	0.0	0.0	8.4	0.0	0.0	0.9	13.5	2.4	1.2	12.8	0.7
Prop In Lane	0.20		0.61	0.69		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	0	0	336	0	0	451	1758	784	78	1013	452
V/C Ratio(X)	0.15	0.00	0.00	0.59	0.00	0.00	0.07	0.57	0.13	0.40	0.72	0.05
Avail Cap(c_a), veh/h	564	0	0	534	0	0	451	1758	784	178	1272	567
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	26.6	0.0	0.0	18.3	10.9	8.3	31.0	20.9	16.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.6	0.0	0.0	0.3	1.3	0.4	3.3	1.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.0	0.0	0.0	0.4	4.6	0.7	0.5	4.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.2	0.0	0.0	28.3	0.0	0.0	18.6	12.3	8.6	34.2	22.4	16.7
LnGrp LOS	C			C			B	B	A	C	C	B
Approach Vol, veh/h		51			197			1135			781	
Approach Delay, s/veh		24.2			28.3			12.1			22.7	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	40.7		17.0	23.8	26.0		17.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	34.7		20.3	16.6	25.1		20.3				
Max Q Clear Time (g_c+I1), s	3.2	15.5		3.7	2.9	14.8		10.4				
Green Ext Time (p_c), s	0.0	7.6		0.2	0.0	3.7		0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				17.7								
HCM 7th LOS				B								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	30	20	20	80	60	20	30	20	20	30	90
Future Vol, veh/h	90	30	20	20	80	60	20	30	20	20	30	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	39	26	26	105	79	26	39	26	26	39	118

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	296	270	99	217	316	53	158	0	0	66	0	0
Stage 1	151	151	-	105	105	-	-	-	-	-	-	-
Stage 2	145	118	-	112	211	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	650	632	949	729	592	1001	1398	-	-	1542	-	-
Stage 1	844	766	-	888	798	-	-	-	-	-	-	-
Stage 2	851	792	-	881	719	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	473	607	949	639	569	1001	1398	-	-	1542	-	-
Mov Cap-2 Maneuver	473	607	-	639	569	-	-	-	-	-	-	-
Stage 1	828	752	-	871	783	-	-	-	-	-	-	-
Stage 2	665	776	-	796	705	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s/v15.17			12.49			2.18			1.05		
HCM LOS	C		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	476	-	-	537	690	224	-	-
HCM Lane V/C Ratio	0.019	-	-	0.343	0.305	0.017	-	-
HCM Control Delay (s/veh)	7.6	0	-	15.2	12.5	7.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	1.3	0.1	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	81	200	52	164	162	71	159	252	270	38
Average Queue (ft)	32	100	12	76	74	21	37	152	156	5
95th Queue (ft)	68	168	38	141	145	52	101	227	241	22
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				3			1	21	0	
Queuing Penalty (veh)				1			5	9	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	121	250	39	69
Average Queue (ft)	65	106	4	19
95th Queue (ft)	104	195	21	53
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 14

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	150	10	40	20	570	120	40	700	10
Future Volume (veh/h)	20	10	20	150	10	40	20	570	120	40	700	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	161	11	43	22	613	129	43	753	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	154	82	113	275	15	52	486	1741	777	92	969	432
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.30	0.53	0.53	0.05	0.29	0.29
Sat Flow, veh/h	496	464	640	1089	85	294	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	215	0	0	22	613	129	43	753	11
Grp Sat Flow(s),veh/h/ln	1601	0	0	1468	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	8.5	0.0	0.0	0.7	8.2	3.5	1.9	15.8	0.4
Cycle Q Clear(g_c), s	2.1	0.0	0.0	10.6	0.0	0.0	0.7	8.2	3.5	1.9	15.8	0.4
Prop In Lane	0.40		0.40	0.75		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	349	0	0	342	0	0	486	1741	777	92	969	432
V/C Ratio(X)	0.16	0.00	0.00	0.63	0.00	0.00	0.05	0.35	0.17	0.47	0.78	0.03
Avail Cap(c_a), veh/h	559	0	0	544	0	0	486	1741	777	153	1353	603
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	0.0	30.0	0.0	0.0	19.2	10.3	9.2	35.0	24.8	19.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.9	0.0	0.0	0.2	0.6	0.5	3.7	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.8	0.0	0.0	0.3	2.8	1.1	0.9	6.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.9	0.0	0.0	31.9	0.0	0.0	19.3	10.8	9.6	38.7	26.7	19.3
LnGrp LOS	C			C			B	B	A	D	C	B
Approach Vol, veh/h	55		215				764			807		
Approach Delay, s/veh	26.9		31.9				10.9			27.3		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.2	46.6	19.5		28.6	28.2	19.5					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	40.6	24.4		16.6	31.0	24.4					
Max Q Clear Time (g_c+I1), s	3.9	10.2	4.1		2.7	17.8	12.6					
Green Ext Time (p_c), s	0.0	5.2	0.2		0.0	4.4	0.9					
Intersection Summary												
HCM 7th Control Delay, s/veh			21.0									
HCM 7th LOS			C									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	57.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	140	10	30	170	120	10	10	50	130	10	20
Future Vol, veh/h	20	140	10	30	170	120	10	10	50	130	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	209	15	45	254	179	15	15	75	194	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	590	537	30	590	515	52	45	0	0	90	0	0
Stage 1	418	418	-	82	82	-	-	-	-	-	-	-
Stage 2	172	119	-	507	433	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	414	445	1033	415	459	1007	1563	-	-	1481	-	-
Stage 1	605	584	-	919	821	-	-	-	-	-	-	-
Stage 2	821	789	-	542	577	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	114	381	1033	172	393	1007	1563	-	-	1481	-	-
Mov Cap-2 Maneuver	114	381	-	172	393	-	-	-	-	-	-	-
Stage 1	523	505	-	909	813	-	-	-	-	-	-	-
Stage 2	459	781	-	271	499	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	54.16		97.91		1.05		6.34	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	220	-	-	307	441	1290	-	-
HCM Lane V/C Ratio	0.01	-	-	0.825	1.084	0.131	-	-
HCM Control Delay (s/veh)	7.3	0	-	54.2	97.9	7.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	7	15.9	0.5	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	79	241	92	245	269	70	199	298	291	53
Average Queue (ft)	26	123	19	139	146	23	44	154	158	8
95th Queue (ft)	61	194	60	223	241	52	112	241	242	30
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				12	0		0	21	0	
Queuing Penalty (veh)				4	0		0	11	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	128	238	40	55
Average Queue (ft)	63	86	5	9
95th Queue (ft)	102	170	23	36
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 15

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	180	10	70	30	990	140	50	720	20
Future Volume (veh/h)	10	10	30	180	10	70	30	990	140	50	720	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	188	10	73	31	1031	146	52	750	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	98	102	224	297	14	86	459	1658	739	103	948	423
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.27	0.49	0.49	0.06	0.28	0.28
Sat Flow, veh/h	198	468	1032	1007	63	394	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	271	0	0	31	1031	146	52	750	21
Grp Sat Flow(s),veh/h/ln	1698	0	0	1464	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	11.8	0.0	0.0	1.1	17.3	4.2	2.3	15.9	0.8
Cycle Q Clear(g_c), s	1.9	0.0	0.0	13.7	0.0	0.0	1.1	17.3	4.2	2.3	15.9	0.8
Prop In Lane	0.20		0.61	0.69		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	0	0	397	0	0	459	1658	739	103	948	423
V/C Ratio(X)	0.12	0.00	0.00	0.68	0.00	0.00	0.07	0.62	0.20	0.50	0.79	0.05
Avail Cap(c_a), veh/h	630	0	0	583	0	0	459	1658	739	153	1239	553
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	28.9	0.0	0.0	21.0	14.5	11.2	35.3	25.8	20.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	2.1	0.0	0.0	0.3	1.8	0.6	3.8	2.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	4.9	0.0	0.0	0.4	6.4	1.4	1.0	6.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.6	0.0	0.0	31.0	0.0	0.0	21.3	16.3	11.8	39.1	28.5	20.4
LnGrp LOS	C			C			C	B	B	D	C	C
Approach Vol, veh/h		51			271			1208			823	
Approach Delay, s/veh		24.6			31.0			15.9			28.9	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	44.0		22.9	27.0	27.7		22.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	38.0		27.0	16.6	28.4		27.0				
Max Q Clear Time (g_c+I1), s	4.3	19.3		3.9	3.1	17.9		15.7				
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	3.8		1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				22.4								
HCM 7th LOS				C								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	16.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	90	20	40	150	100	20	30	40	40	30	90
Future Vol, veh/h	90	90	20	40	150	100	20	30	40	40	30	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	118	26	53	197	132	26	39	53	53	39	118

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	395	349	99	322	382	66	158	0	0	92	0	0
Stage 1	204	204	-	118	118	-	-	-	-	-	-	-
Stage 2	191	145	-	204	263	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	560	570	949	621	543	984	1398	-	-	1509	-	-
Stage 1	791	727	-	874	788	-	-	-	-	-	-	-
Stage 2	804	771	-	787	682	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	287	537	949	449	512	984	1398	-	-	1509	-	-
Mov Cap-2 Maneuver	287	537	-	449	512	-	-	-	-	-	-	-
Stage 1	760	699	-	857	772	-	-	-	-	-	-	-
Stage 2	508	756	-	611	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v29.97		20.91	1.69	1.87
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	359	-	-	398	600	391	-	-
HCM Lane V/C Ratio	0.019	-	-	0.661	0.636	0.035	-	-
HCM Control Delay (s/veh)	7.6	0	-	30	20.9	7.5	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4.6	4.5	0.1	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	89	307	63	188	185	98	199	291	279	35
Average Queue (ft)	37	139	12	92	96	33	56	170	177	4
95th Queue (ft)	81	233	38	158	172	74	131	259	261	20
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				6				2	25	0
Queuing Penalty (veh)				1				8	16	0

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	287	557	39	107
Average Queue (ft)	114	345	4	34
95th Queue (ft)	223	638	22	77
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)			27	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 25

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Future Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	22	22	226	22	54	22	645	183	65	796	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	162	157	129	341	25	62	385	1511	674	113	981	438
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.46	0.46	0.07	0.29	0.29
Sat Flow, veh/h	421	657	539	1086	106	260	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	66	0	0	302	0	0	22	645	183	65	796	11
Grp Sat Flow(s),veh/h/ln	1617	0	0	1451	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	13.0	0.0	0.0	0.8	10.3	6.0	2.9	17.3	0.4
Cycle Q Clear(g_c), s	2.4	0.0	0.0	15.4	0.0	0.0	0.8	10.3	6.0	2.9	17.3	0.4
Prop In Lane	0.33		0.33	0.75		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	0	0	428	0	0	385	1511	674	113	981	438
V/C Ratio(X)	0.15	0.00	0.00	0.71	0.00	0.00	0.06	0.43	0.27	0.57	0.81	0.03
Avail Cap(c_a), veh/h	609	0	0	578	0	0	385	1511	674	193	1213	541
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	0.0	28.2	0.0	0.0	23.1	14.1	12.9	35.2	25.5	19.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	2.5	0.0	0.0	0.3	0.9	1.0	4.5	3.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	5.4	0.0	0.0	0.3	3.7	2.0	1.3	7.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	0.0	0.0	30.6	0.0	0.0	23.4	14.9	13.9	39.8	29.0	19.5
LnGrp LOS	C			C			C	B	B	D	C	B
Approach Vol, veh/h		66			302			850				872
Approach Delay, s/veh		23.6			30.6			14.9				29.6
Approach LOS		C			C			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	42.0		24.7	24.3	29.0		24.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	36.0		27.0	16.6	28.4		27.0				
Max Q Clear Time (g_c+I1), s	4.9	12.3		4.4	2.8	19.3		17.4				
Green Ext Time (p_c), s	0.0	5.4		0.3	0.0	3.7		1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.6								
HCM 7th LOS				C								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	193.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	220	10	40	250	150	10	10	60	170	10	20
Future Vol, veh/h	20	220	10	40	250	150	10	10	60	170	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	328	15	60	373	224	15	15	90	254	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	769	672	30	776	642	60	45	0	0	104	0	0
Stage 1	537	537	-	90	90	-	-	-	-	-	-	-
Stage 2	231	134	-	687	552	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	313	372	1033	311	389	997	1563	-	-	1462	-	-
Stage 1	520	516	-	910	815	-	-	-	-	-	-	-
Stage 2	763	778	-	432	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	198	~ 303	1033	249	~ 316	997	1563	-	-	1462	-	-
Mov Cap-2 Maneuver	198	~ 303	-	249	~ 316	-	-	-	-	-	-	-
Stage 1	428	424	-	901	807	-	-	-	-	-	-	-
Stage 2	315	770	-	79	419	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	73.24	\$ 325.75	0.92	6.78
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	192	-	-	298	399	1350	-	-
HCM Lane V/C Ratio	0.01	-	-	1.25	1.645	0.174	-	-
HCM Control Delay (s/veh)	7.3	0	-	173.2	325.8	8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	17.4	38.6	0.6	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	85	318	209	330	356	194	197	318	309	24
Average Queue (ft)	32	176	28	183	192	36	59	186	187	6
95th Queue (ft)	69	274	111	283	298	112	149	282	282	21
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)			0	22	1		1	30	0	
Queuing Penalty (veh)			0	7	3		5	19	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	212	557	60	57
Average Queue (ft)	97	315	10	18
95th Queue (ft)	168	610	39	48
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)		21		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 33

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	20	30	240	20	90	30	1050	200	60	760	20
Future Volume (veh/h)	10	20	30	240	20	90	30	1050	200	60	760	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	21	31	250	21	94	31	1094	208	62	792	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	96	192	241	347	23	105	398	1547	690	104	962	429
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.23	0.46	0.46	0.06	0.28	0.28
Sat Flow, veh/h	175	683	858	996	84	374	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	62	0	0	365	0	0	31	1094	208	62	792	21
Grp Sat Flow(s),veh/h/ln	1716	0	0	1454	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	19.1	0.0	0.0	1.3	23.2	7.8	3.2	19.6	0.9
Cycle Q Clear(g_c), s	2.4	0.0	0.0	21.5	0.0	0.0	1.3	23.2	7.8	3.2	19.6	0.9
Prop In Lane	0.16		0.50	0.68		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	0	0	476	0	0	398	1547	690	104	962	429
V/C Ratio(X)	0.12	0.00	0.00	0.77	0.00	0.00	0.08	0.71	0.30	0.60	0.82	0.05
Avail Cap(c_a), veh/h	686	0	0	615	0	0	398	1547	690	132	1185	529
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	30.7	0.0	0.0	26.8	19.5	15.3	41.0	30.0	23.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	4.3	0.0	0.0	0.4	2.7	1.1	5.3	4.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	7.9	0.0	0.0	0.6	9.2	2.8	1.5	8.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.2	0.0	0.0	35.0	0.0	0.0	27.2	22.3	16.4	46.3	34.0	23.3
LnGrp LOS	C			C			C	C	B	D	C	C
Approach Vol, veh/h		62			365			1333			875	
Approach Delay, s/veh		24.2			35.0			21.5			34.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	47.0		31.2	27.0	31.5		31.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	41.0		34.0	16.6	31.4		34.0				
Max Q Clear Time (g_c+I1), s	5.2	25.2		4.4	3.3	21.6		23.5				
Green Ext Time (p_c), s	0.0	7.9		0.3	0.0	3.9		1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				27.8								
HCM 7th LOS				C								

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	230.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	100	160	20	60	230	160	20	30	80	80	30	100
Future Vol, veh/h	100	160	20	60	230	160	20	30	80	80	30	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	132	211	26	79	303	211	26	39	105	105	39	132

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	559	513	105	500	526	92	171	0	0	145	0	0
Stage 1	316	316	-	145	145	-	-	-	-	-	-	-
Stage 2	243	197	-	355	382	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	435	460	941	473	450	952	1382	-	-	1444	-	-
Stage 1	689	650	-	846	768	-	-	-	-	-	-	-
Stage 2	754	732	-	652	604	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 83	414	941	214	404	952	1382	-	-	1444	-	-
Mov Cap-2 Maneuver	~ 83	414	-	214	404	-	-	-	-	-	-	-
Stage 1	633	597	-	828	752	-	-	-	-	-	-	-
Stage 2	343	717	-	376	555	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, \$/veh	569.11		192.81		1.18		2.93	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	242	-	-	173	442	594	-	-
HCM Lane V/C Ratio	0.019	-	-	2.126	1.339	0.073	-	-
HCM Control Delay (s/veh)	7.7	0	0	\$ 569.1	192.8	7.7	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	29.1	27	0.2	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queuing and Blocking Report
Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	82	184	49	155	148	62	145	233	237	43
Average Queue (ft)	34	88	11	67	63	15	31	133	137	5
95th Queue (ft)	73	149	35	124	128	42	85	203	211	22
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				1			0	15	0	
Queuing Penalty (veh)				0			0	5	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	115	137	18	68
Average Queue (ft)	52	69	1	11
95th Queue (ft)	92	116	9	43
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 5

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	120	10	40	20	550	90	30	680	10
Future Volume (veh/h)	20	10	20	120	10	40	20	550	90	30	680	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	129	11	43	22	591	97	32	731	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	147	78	100	246	20	54	465	1744	778	78	985	440
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.28	0.53	0.53	0.05	0.30	0.30
Sat Flow, veh/h	472	506	652	1010	128	349	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	183	0	0	22	591	97	32	731	11
Grp Sat Flow(s),veh/h/ln	1629	0	0	1487	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	6.0	0.0	0.0	0.7	7.0	2.2	1.3	13.4	0.4
Cycle Q Clear(g_c), s	1.9	0.0	0.0	7.9	0.0	0.0	0.7	7.0	2.2	1.3	13.4	0.4
Prop In Lane	0.40		0.40	0.70		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	0	0	320	0	0	465	1744	778	78	985	440
V/C Ratio(X)	0.17	0.00	0.00	0.57	0.00	0.00	0.05	0.34	0.12	0.41	0.74	0.03
Avail Cap(c_a), veh/h	512	0	0	501	0	0	465	1744	778	173	1306	582
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	0.0	27.4	0.0	0.0	17.6	9.0	7.9	31.3	21.4	16.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.6	0.0	0.0	0.2	0.5	0.3	3.4	1.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.8	0.0	0.0	0.3	2.2	0.7	0.6	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.2	0.0	0.0	29.0	0.0	0.0	17.8	9.5	8.2	34.7	23.1	16.9
LnGrp LOS	C			C			B	A	A	C	C	B
Approach Vol, veh/h	55		183				710			774		
Approach Delay, s/veh	25.2		29.0				9.6			23.4		
Approach LOS	C		C				A			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.2	42.0	16.4		25.2	26.0	16.4					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	36.0	19.0		16.5	26.5	19.0					
Max Q Clear Time (g_c+I1), s	3.3	9.0	3.9		2.7	15.4	9.9					
Green Ext Time (p_c), s	0.0	4.7	0.2		0.0	3.9	0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh			18.4									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	14.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	100	10	20	140	90	10	10	30	80	10	20
Future Vol, veh/h	20	100	10	20	140	90	10	10	30	80	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	149	15	30	209	134	15	15	45	119	15	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	418	358	30	396	351	37	45	0	0	60	0	0
Stage 1	269	269	-	67	67	-	-	-	-	-	-	-
Stage 2	149	90	-	328	284	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.56	6.26	7.15	6.55	6.25	4.12	-	-	4.16	-	-
Critical Hdwy Stg 1	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.56	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4.054	3.354	3.545	4.045	3.345	2.218	-	-	2.254	-	-
Pot Cap-1 Maneuver	538	562	1033	559	569	1026	1563	-	-	1519	-	-
Stage 1	728	680	-	936	833	-	-	-	-	-	-	-
Stage 2	844	813	-	678	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	264	511	1033	365	518	1026	1563	-	-	1519	-	-
Mov Cap-2 Maneuver	264	511	-	365	518	-	-	-	-	-	-	-
Stage 1	669	625	-	926	825	-	-	-	-	-	-	-
Stage 2	542	805	-	468	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	18.3	20.03	1.46	5.51
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	313	-	-	462	605	1155	-	-
HCM Lane V/C Ratio	0.01	-	-	0.42	0.616	0.079	-	-
HCM Control Delay (s/veh)	7.3	0	-	18.3	20	7.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	4.2	0.3	-	-

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	88	219	152	259	248	55	125	246	255	41
Average Queue (ft)	28	93	17	110	113	14	30	139	144	9
95th Queue (ft)	60	164	66	194	205	37	84	215	228	29
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)			0	7	0		0	16	0	
Queuing Penalty (veh)			0	2	0		0	5	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	88	106	35	34
Average Queue (ft)	49	52	4	3
95th Queue (ft)	78	89	22	17
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 7

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	130	10	50	30	960	100	30	700	20
Future Volume (veh/h)	10	10	30	130	10	50	30	960	100	30	700	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	135	10	52	31	1000	104	31	729	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	91	83	171	252	19	65	451	1758	784	78	1013	452
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.27	0.52	0.52	0.05	0.30	0.30
Sat Flow, veh/h	161	505	1033	975	118	392	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	197	0	0	31	1000	104	31	729	21
Grp Sat Flow(s),veh/h/ln	1700	0	0	1484	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	6.7	0.0	0.0	0.9	13.5	2.4	1.2	12.8	0.7
Cycle Q Clear(g_c), s	1.7	0.0	0.0	8.4	0.0	0.0	0.9	13.5	2.4	1.2	12.8	0.7
Prop In Lane	0.20		0.61	0.69		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	0	0	336	0	0	451	1758	784	78	1013	452
V/C Ratio(X)	0.15	0.00	0.00	0.59	0.00	0.00	0.07	0.57	0.13	0.40	0.72	0.05
Avail Cap(c_a), veh/h	564	0	0	534	0	0	451	1758	784	178	1272	567
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	26.6	0.0	0.0	18.3	10.9	8.3	31.0	20.9	16.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.6	0.0	0.0	0.3	1.3	0.4	3.3	1.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	3.0	0.0	0.0	0.4	4.6	0.7	0.5	4.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.2	0.0	0.0	28.3	0.0	0.0	18.6	12.3	8.6	34.2	22.4	16.7
LnGrp LOS	C			C			B	B	A	C	C	B
Approach Vol, veh/h	51		197				1135			781		
Approach Delay, s/veh	24.2		28.3				12.1			22.7		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.1	40.7	17.0		23.8	26.0	17.0					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	34.7	20.3		16.6	25.1	20.3					
Max Q Clear Time (g_c+I1), s	3.2	15.5	3.7		2.9	14.8	10.4					
Green Ext Time (p_c), s	0.0	7.6	0.2		0.0	3.7	0.7					
Intersection Summary												
HCM 7th Control Delay, s/veh			17.7									
HCM 7th LOS			B									

HCM 7th TWSC
6: Maple St & Laurel St

07/24/2024

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	30	20	20	80	60	20	30	20	20	30	90
Future Vol, veh/h	90	30	20	20	80	60	20	30	20	20	30	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	39	26	26	105	79	26	39	26	26	39	118

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	296	270	99	217	316	53	158	0	0	66	0	0
Stage 1	151	151	-	105	105	-	-	-	-	-	-	-
Stage 2	145	118	-	112	211	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.17	6.57	6.27	4.16	-	-	4.11	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.563	4.063	3.363	2.254	-	-	2.209	-	-
Pot Cap-1 Maneuver	650	632	949	729	592	1001	1398	-	-	1542	-	-
Stage 1	844	766	-	888	798	-	-	-	-	-	-	-
Stage 2	851	792	-	881	719	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	473	607	949	639	569	1001	1398	-	-	1542	-	-
Mov Cap-2 Maneuver	473	607	-	639	569	-	-	-	-	-	-	-
Stage 1	828	752	-	871	783	-	-	-	-	-	-	-
Stage 2	665	776	-	796	705	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s/v15.17			12.49			2.18		1.05		
HCM LOS	C		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	476	-	-	537	690	224	-	-
HCM Lane V/C Ratio	0.019	-	-	0.343	0.305	0.017	-	-
HCM Control Delay (s/veh)	7.6	0	-	15.2	12.5	7.4	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	1.3	0.1	-	-

Queuing and Blocking Report

Baseline

09/03/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	96	215	60	171	181	64	199	268	268	39
Average Queue (ft)	36	102	14	81	81	20	40	153	153	6
95th Queue (ft)	76	176	43	150	149	49	106	227	238	23
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				3			1	21	0	
Queuing Penalty (veh)				1			4	9	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	108	198	68	152
Average Queue (ft)	60	89	35	61
95th Queue (ft)	96	160	57	109
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 14

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

09/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	10	20	150	10	40	20	570	120	40	700	10
Future Volume (veh/h)	20	10	20	150	10	40	20	570	120	40	700	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	11	22	161	11	43	22	613	129	43	753	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	154	82	113	275	15	52	486	1741	777	92	969	432
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.30	0.53	0.53	0.05	0.29	0.29
Sat Flow, veh/h	496	464	640	1089	85	294	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	55	0	0	215	0	0	22	613	129	43	753	11
Grp Sat Flow(s),veh/h/ln	1601	0	0	1468	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	8.5	0.0	0.0	0.7	8.2	3.5	1.9	15.8	0.4
Cycle Q Clear(g_c), s	2.1	0.0	0.0	10.6	0.0	0.0	0.7	8.2	3.5	1.9	15.8	0.4
Prop In Lane	0.40		0.40	0.75		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	349	0	0	342	0	0	486	1741	777	92	969	432
V/C Ratio(X)	0.16	0.00	0.00	0.63	0.00	0.00	0.05	0.35	0.17	0.47	0.78	0.03
Avail Cap(c_a), veh/h	559	0	0	544	0	0	486	1741	777	153	1353	603
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	0.0	30.0	0.0	0.0	19.2	10.3	9.2	35.0	24.8	19.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.9	0.0	0.0	0.2	0.6	0.5	3.7	1.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	3.8	0.0	0.0	0.3	2.8	1.1	0.9	6.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	26.9	0.0	0.0	31.9	0.0	0.0	19.3	10.8	9.6	38.7	26.7	19.3
LnGrp LOS	C			C			B	B	A	D	C	B
Approach Vol, veh/h	55		215				764			807		
Approach Delay, s/veh	26.9		31.9				10.9			27.3		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.2	46.6	19.5		28.6	28.2	19.5					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	40.6	24.4		16.6	31.0	24.4					
Max Q Clear Time (g_c+I1), s	3.9	10.2	4.1		2.7	17.8	12.6					
Green Ext Time (p_c), s	0.0	5.2	0.2		0.0	4.4	0.9					
Intersection Summary												
HCM 7th Control Delay, s/veh			21.0									
HCM 7th LOS			C									

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	140	10	30	170	120	10	10	50	130	10	20
Future Vol, veh/h	20	140	10	30	170	120	10	10	50	130	10	20
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	209	15	45	254	179	15	15	75	194	15	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13	20.1	10.5	13.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	12%	9%	81%
Vol Thru, %	14%	82%	53%	6%
Vol Right, %	71%	6%	38%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	170	320	160
LT Vol	10	20	30	130
Through Vol	10	140	170	10
RT Vol	50	10	120	20
Lane Flow Rate	104	254	478	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.179	0.411	0.703	0.416
Departure Headway (Hd)	6.173	5.838	5.299	6.277
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	585	611	678	568
Service Time	4.173	3.925	3.37	4.363
HCM Lane V/C Ratio	0.178	0.416	0.705	0.421
HCM Control Delay, s/veh	10.5	13	20.1	13.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	2	5.8	2

Queuing and Blocking Report
Baseline

09/03/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	64	245	152	280	302	69	198	286	284	49
Average Queue (ft)	26	121	23	143	149	22	46	156	158	9
95th Queue (ft)	55	203	81	240	250	48	120	236	240	31
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)			0	13	0		1	21	0	
Queuing Penalty (veh)			0	4	1		2	11	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	106	129	82	94
Average Queue (ft)	58	67	41	45
95th Queue (ft)	90	106	68	73
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 17

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

09/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	10	30	180	10	70	30	990	140	50	720	20
Future Volume (veh/h)	10	10	30	180	10	70	30	990	140	50	720	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	10	31	188	10	73	31	1031	146	52	750	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	98	102	224	297	14	86	459	1658	739	103	948	423
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.27	0.49	0.49	0.06	0.28	0.28
Sat Flow, veh/h	198	468	1032	1007	63	394	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	51	0	0	271	0	0	31	1031	146	52	750	21
Grp Sat Flow(s),veh/h/ln	1698	0	0	1464	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	11.8	0.0	0.0	1.1	17.3	4.2	2.3	15.9	0.8
Cycle Q Clear(g_c), s	1.9	0.0	0.0	13.7	0.0	0.0	1.1	17.3	4.2	2.3	15.9	0.8
Prop In Lane	0.20		0.61	0.69		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	0	0	397	0	0	459	1658	739	103	948	423
V/C Ratio(X)	0.12	0.00	0.00	0.68	0.00	0.00	0.07	0.62	0.20	0.50	0.79	0.05
Avail Cap(c_a), veh/h	630	0	0	583	0	0	459	1658	739	153	1239	553
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	28.9	0.0	0.0	21.0	14.5	11.2	35.3	25.8	20.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	2.1	0.0	0.0	0.3	1.8	0.6	3.8	2.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	4.9	0.0	0.0	0.4	6.4	1.4	1.0	6.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.6	0.0	0.0	31.0	0.0	0.0	21.3	16.3	11.8	39.1	28.5	20.4
LnGrp LOS	C			C			C	B	B	D	C	C
Approach Vol, veh/h		51			271			1208			823	
Approach Delay, s/veh		24.6			31.0			15.9			28.9	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	44.0		22.9	27.0	27.7		22.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	38.0		27.0	16.6	28.4		27.0				
Max Q Clear Time (g_c+I1), s	4.3	19.3		3.9	3.1	17.9		15.7				
Green Ext Time (p_c), s	0.0	7.9		0.2	0.0	3.8		1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				22.4								
HCM 7th LOS				C								

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	90	90	20	40	150	100	20	30	40	40	30	90
Future Vol, veh/h	90	90	20	40	150	100	20	30	40	40	30	90
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	118	118	26	53	197	132	26	39	53	53	39	118
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.4	14.6	10.4	11.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	45%	14%	25%
Vol Thru, %	33%	45%	52%	19%
Vol Right, %	44%	10%	34%	56%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	90	200	290	160
LT Vol	20	90	40	40
Through Vol	30	90	150	30
RT Vol	40	20	100	90
Lane Flow Rate	118	263	382	211
Geometry Grp	1	1	1	1
Degree of Util (X)	0.195	0.407	0.554	0.326
Departure Headway (Hd)	5.914	5.561	5.223	5.576
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	645	687	642
Service Time	3.984	3.615	3.272	3.639
HCM Lane V/C Ratio	0.195	0.408	0.556	0.329
HCM Control Delay, s/veh	10.4	12.4	14.6	11.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.7	2	3.4	1.4

Queuing and Blocking Report
Baseline

09/03/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	128	264	58	192	214	105	199	281	297	31
Average Queue (ft)	42	147	12	98	102	34	61	171	176	4
95th Queue (ft)	94	237	39	173	185	79	142	260	266	20
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				6	0		1	25	0	
Queuing Penalty (veh)				1	0		3	16	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (ft)	213	260	137	72	145
Average Queue (ft)	94	98	48	40	67
95th Queue (ft)	170	204	95	66	115
Link Distance (ft)	1812	511	511	1021	1200
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 21

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

09/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Future Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	22	22	226	22	54	22	645	183	65	796	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	162	157	129	341	25	62	385	1511	674	113	981	438
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.46	0.46	0.07	0.29	0.29
Sat Flow, veh/h	421	657	539	1086	106	260	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	66	0	0	302	0	0	22	645	183	65	796	11
Grp Sat Flow(s),veh/h/ln	1617	0	0	1451	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	13.0	0.0	0.0	0.8	10.3	6.0	2.9	17.3	0.4
Cycle Q Clear(g_c), s	2.4	0.0	0.0	15.4	0.0	0.0	0.8	10.3	6.0	2.9	17.3	0.4
Prop In Lane	0.33		0.33	0.75		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	0	0	428	0	0	385	1511	674	113	981	438
V/C Ratio(X)	0.15	0.00	0.00	0.71	0.00	0.00	0.06	0.43	0.27	0.57	0.81	0.03
Avail Cap(c_a), veh/h	609	0	0	578	0	0	385	1511	674	193	1213	541
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	0.0	28.2	0.0	0.0	23.1	14.1	12.9	35.2	25.5	19.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	2.5	0.0	0.0	0.3	0.9	1.0	4.5	3.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	5.4	0.0	0.0	0.3	3.7	2.0	1.3	7.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	0.0	0.0	30.6	0.0	0.0	23.4	14.9	13.9	39.8	29.0	19.5
LnGrp LOS	C			C			C	B	B	D	C	B
Approach Vol, veh/h		66			302			850				872
Approach Delay, s/veh		23.6			30.6			14.9				29.6
Approach LOS		C			C			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.3	42.0		24.7	24.3	29.0		24.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	36.0		27.0	16.6	28.4		27.0				
Max Q Clear Time (g_c+I1), s	4.9	12.3		4.4	2.8	19.3		17.4				
Green Ext Time (p_c), s	0.0	5.4		0.3	0.0	3.7		1.2				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.6								
HCM 7th LOS				C								

Intersection	
Intersection Delay, s/veh	24.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	20	220	10	40	250	150	10	10	60	170	10	20
Future Vol, veh/h	20	220	10	40	250	150	10	10	60	170	10	20
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	6	6	6	5	5	5	2	2	2	6	6	6
Mvmt Flow	30	328	15	60	373	224	15	15	90	254	15	30
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	24.8	28.8	12.9	20.9
HCM LOS	C	D	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	13%	8%	14%	0%	85%
Vol Thru, %	13%	88%	86%	0%	5%
Vol Right, %	75%	4%	0%	100%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	250	290	150	200
LT Vol	10	20	40	0	170
Through Vol	10	220	250	0	10
RT Vol	60	10	0	150	20
Lane Flow Rate	119	373	433	224	299
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.246	0.707	0.842	0.387	0.604
Departure Headway (Hd)	7.414	6.822	7.005	6.218	7.288
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	481	530	515	575	493
Service Time	5.507	4.889	4.771	3.983	5.356
HCM Lane V/C Ratio	0.247	0.704	0.841	0.39	0.606
HCM Control Delay, s/veh	12.9	24.8	37	12.9	20.9
HCM Lane LOS	B	C	E	B	C
HCM 95th-tile Q	1	5.6	8.6	1.8	3.9

Queuing and Blocking Report

Baseline

09/03/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	76	295	209	336	351	153	198	312	299	51
Average Queue (ft)	28	166	25	180	190	35	59	181	181	8
95th Queue (ft)	65	258	100	296	309	97	141	273	263	30
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	100			300
Storage Blk Time (%)				21	2		2	28	0	
Queuing Penalty (veh)				6	4		8	17	0	

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	LTR	LTR
Maximum Queue (ft)	126	109	82	77	78
Average Queue (ft)	67	61	41	42	43
95th Queue (ft)	105	95	69	66	69
Link Distance (ft)	1812	511	511	1021	1200
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 35

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

09/03/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	10	20	30	240	20	90	30	1050	200	60	760	20
Future Volume (veh/h)	10	20	30	240	20	90	30	1050	200	60	760	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1781	1781	1781	1781	1781	1781
Adj Flow Rate, veh/h	10	21	31	250	21	94	31	1094	208	62	792	21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	3	3	3	8	8	8	8	8	8
Cap, veh/h	96	192	241	347	23	105	398	1547	690	104	962	429
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.23	0.46	0.46	0.06	0.28	0.28
Sat Flow, veh/h	175	683	858	996	84	374	1697	3385	1510	1697	3385	1510
Grp Volume(v), veh/h	62	0	0	365	0	0	31	1094	208	62	792	21
Grp Sat Flow(s),veh/h/ln	1716	0	0	1454	0	0	1697	1692	1510	1697	1692	1510
Q Serve(g_s), s	0.0	0.0	0.0	19.1	0.0	0.0	1.3	23.2	7.8	3.2	19.6	0.9
Cycle Q Clear(g_c), s	2.4	0.0	0.0	21.5	0.0	0.0	1.3	23.2	7.8	3.2	19.6	0.9
Prop In Lane	0.16		0.50	0.68		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	0	0	476	0	0	398	1547	690	104	962	429
V/C Ratio(X)	0.12	0.00	0.00	0.77	0.00	0.00	0.08	0.71	0.30	0.60	0.82	0.05
Avail Cap(c_a), veh/h	686	0	0	615	0	0	398	1547	690	132	1185	529
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	30.7	0.0	0.0	26.8	19.5	15.3	41.0	30.0	23.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	4.3	0.0	0.0	0.4	2.7	1.1	5.3	4.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	7.9	0.0	0.0	0.6	9.2	2.8	1.5	8.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.2	0.0	0.0	35.0	0.0	0.0	27.2	22.3	16.4	46.3	34.0	23.3
LnGrp LOS	C			C			C	C	B	D	C	C
Approach Vol, veh/h		62			365			1333				875
Approach Delay, s/veh		24.2			35.0			21.5				34.6
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	47.0		31.2	27.0	31.5		31.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	41.0		34.0	16.6	31.4		34.0				
Max Q Clear Time (g_c+I1), s	5.2	25.2		4.4	3.3	21.6		23.5				
Green Ext Time (p_c), s	0.0	7.9		0.3	0.0	3.9		1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				27.8								
HCM 7th LOS				C								

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	100	160	20	60	230	160	20	30	80	80	30	100
Future Vol, veh/h	100	160	20	60	230	160	20	30	80	80	30	100
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	5	5	5	7	7	7	6	6	6	1	1	1
Mvmt Flow	132	211	26	79	303	211	26	39	105	105	39	132
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay, s/veh	24.3	22.9	14.2	17.8
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	15%	36%	21%	0%	38%
Vol Thru, %	23%	57%	79%	0%	14%
Vol Right, %	62%	7%	0%	100%	48%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	280	290	160	210
LT Vol	20	100	60	0	80
Through Vol	30	160	230	0	30
RT Vol	80	20	0	160	100
Lane Flow Rate	171	368	382	211	276
Geometry Grp	2	4a	5	5	2
Degree of Util (X)	0.346	0.698	0.753	0.368	0.534
Departure Headway (Hd)	7.281	6.825	7.107	6.285	6.952
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	491	527	508	568	517
Service Time	5.375	4.904	4.884	4.061	5.028
HCM Lane V/C Ratio	0.348	0.698	0.752	0.371	0.534
HCM Control Delay, s/veh	14.2	24.3	28.6	12.7	17.8
HCM Lane LOS	B	C	D	B	C
HCM 95th-tile Q	1.5	5.4	6.5	1.7	3.1

Queuing and Blocking Report

Baseline

07/24/2024

Intersection: 5: US 19 & Laurel Creek Rd/Laurel St

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	97	266	82	180	205	100	115	266	266	39
Average Queue (ft)	36	135	12	94	100	31	45	163	166	5
95th Queue (ft)	77	224	50	158	175	73	95	242	245	21
Link Distance (ft)	1729	1812		1906	1906			1835	1835	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			110			275	200			300
Storage Blk Time (%)				5				3		
Queuing Penalty (veh)				1				2		

Intersection: 6: Maple St & Laurel St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	363	436	94	227
Average Queue (ft)	119	170	38	103
95th Queue (ft)	281	339	71	187
Link Distance (ft)	1812	510	1021	1209
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 3

HCM 7th Signalized Intersection Summary

5: US 19 & Laurel Creek Rd/Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕	↗	↗	↕	↗
Traffic Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Future Volume (veh/h)	20	20	20	210	20	50	20	600	170	60	740	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1722	1722	1722	1752	1752	1752
Adj Flow Rate, veh/h	22	22	22	226	22	54	22	645	183	65	796	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	4	4	4	12	12	12	10	10	10
Cap, veh/h	163	158	128	343	25	62	384	1467	655	117	946	422
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.45	0.45	0.07	0.28	0.28
Sat Flow, veh/h	414	666	540	1087	106	260	1640	3272	1459	1668	3328	1485
Grp Volume(v), veh/h	66	0	0	302	0	0	22	645	183	65	796	11
Grp Sat Flow(s),veh/h/ln	1621	0	0	1452	0	0	1640	1636	1459	1668	1664	1485
Q Serve(g_s), s	0.0	0.0	0.0	12.3	0.0	0.0	0.8	10.0	5.8	2.8	16.6	0.4
Cycle Q Clear(g_c), s	2.3	0.0	0.0	14.6	0.0	0.0	0.8	10.0	5.8	2.8	16.6	0.4
Prop In Lane	0.33		0.33	0.75		0.18	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	449	0	0	430	0	0	384	1467	655	117	946	422
V/C Ratio(X)	0.15	0.00	0.00	0.70	0.00	0.00	0.06	0.44	0.28	0.56	0.84	0.03
Avail Cap(c_a), veh/h	542	0	0	517	0	0	384	1467	655	159	1063	474
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	0.0	0.0	26.8	0.0	0.0	21.9	13.9	12.8	33.1	24.8	19.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	3.4	0.0	0.0	0.3	1.0	1.1	4.1	5.7	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	5.2	0.0	0.0	0.3	3.6	1.9	1.2	6.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.4	0.0	0.0	30.1	0.0	0.0	22.1	14.9	13.9	37.2	30.5	19.0
LnGrp LOS	C			C			C	B	B	D	C	B
Approach Vol, veh/h	66		302				850			872		
Approach Delay, s/veh	22.4		30.1				14.9			30.8		
Approach LOS	C		C				B			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	11.1	39.0	23.4		23.2	26.9	23.4					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	33.0	22.0		16.5	23.5	22.0					
Max Q Clear Time (g_c+I1), s	4.8	12.0	4.3		2.8	18.6	16.6					
Green Ext Time (p_c), s	0.0	5.2	0.2		0.0	2.3	0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh			24.0									
HCM 7th LOS			C									

HCM 7th Signalized Intersection Summary

6: Maple St & Laurel St

07/24/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	220	10	40	250	150	10	10	60	170	10	20
Future Volume (veh/h)	20	220	10	40	250	150	10	10	60	170	10	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1826	1826	1826	1870	1870	1870	1811	1811	1811
Adj Flow Rate, veh/h	30	328	15	60	373	224	15	15	90	254	15	30
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Percent Heavy Veh, %	6	6	6	5	5	5	2	2	2	6	6	6
Cap, veh/h	116	761	33	129	470	265	114	86	330	459	19	37
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	64	1617	70	89	1000	564	90	326	1250	1180	70	139
Grp Volume(v), veh/h	373	0	0	657	0	0	120	0	0	299	0	0
Grp Sat Flow(s),veh/h/ln	1751	0	0	1653	0	0	1667	0	0	1390	0	0
Q Serve(g_s), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	15.5	0.0	0.0	2.6	0.0	0.0	8.8	0.0	0.0
Prop In Lane	0.08		0.04	0.09		0.34	0.12		0.75	0.85		0.10
Lane Grp Cap(c), veh/h	910	0	0	864	0	0	529	0	0	514	0	0
V/C Ratio(X)	0.41	0.00	0.00	0.76	0.00	0.00	0.23	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1191	0	0	1141	0	0	778	0	0	717	0	0
HCM 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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	0.0	0.0	10.3	0.0	0.0	13.2	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	2.2	0.0	0.0	0.2	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.0	4.5	0.0	0.0	0.9	0.0	0.0	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.3	0.0	0.0	12.5	0.0	0.0	13.4	0.0	0.0	16.3	0.0	0.0
LnGrp LOS	A			B			B			B		
Approach Vol, veh/h		373			657			120				299
Approach Delay, s/veh		8.3			12.5			13.4				16.3
Approach LOS		A			B			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.2		17.9		27.2		17.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		29.0		19.0		29.0		19.0				
Max Q Clear Time (g_c+I1), s		17.5		4.6		8.3		10.8				
Green Ext Time (p_c), s		3.7		0.5		2.4		1.1				
Intersection Summary												
HCM 7th Control Delay, s/veh				12.3								
HCM 7th LOS				B								