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MEMORANDUM

TO: Mike Van Gilder, PE

FROM: Josh Woller, PE (Lic. WI, IL, IN, MI)

DATE: October 27, 2022

RE: Main Street Traffic Study
City of Rice Lake
SEH No. 168738 14.00

The City of Rice Lake has received a Neighborhood Investment Fund grant for the reconstruction of Main Street from Water Street to Evans Street. The preliminary concept plans for this segment of roadway will reduce the travel lanes on Main Street from 2 lanes in each direction with no turn lanes to 1 travel lane in each direction with left turn lanes at all intersections. Due to the proposed changes in geometry a traffic study has been conducted to review existing and proposed traffic operations. The traffic study includes data collection, evaluation of existing traffic operations, evaluation of proposed traffic conditions, as well as a review of existing safety for the project study area.

Study Area / Data Collection

As noted, the overall study area begins at Water Street and continues north to Evans Street. In order to analyze traffic operations turning movement counts were collected at the three (3) main intersections along the study area. SEH utilized video camera equipment to collect and process 13-hour turning movement count data on Tuesday, July 19, 2022, at three study intersections:

1. Main Street & Messenger Street
2. Main Street & Eau Claire Street
3. Main Street & Marshall Street

Due to emergency sanitary sewer repairs that resulted in the closure of Marshall Street on the date noted above, cameras were redeployed on Wednesday, August 3, 2022, at the intersection of Main Street & Marshall Street.

The AM and PM peak hours for the network were determined to be 9:00-10:00 AM and 3:15-4:15 PM. The existing traffic volumes for the study area are included with Figure 3.

Evaluation of Existing Conditions

The study area intersections were analyzed using procedures set forth in the *Highway Capacity Manual 6th Edition (HCM)*. Level of service (LOS) is the metric by which roadway operations are defined based on the delay/congestion experienced by users of the facility. LOS ranges from LOS A, little to no delay/congestion, to LOS F, significant delay/congestion. Generally, a LOS D or better indicates acceptable operating conditions during a peak hour. Descriptions of the various levels of service are as follows:

- *LOS A* is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.
- *LOS B* represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.
- *LOS C* still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.
- *LOS D* represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.
- *LOS E* represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.
- *LOS F* represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

Due to the unique existing geometry which includes shared left/through lanes with designed left turn phasing, the typical HCM 6th edition reports are not included due to limitations within the methodology to analyze non-traditional signal phasing. Because of this HCM 2000 report results were included in this report for existing conditions. These reports follow a similar methodology to those identified above.

The existing traffic operations capacity analysis is based on the existing geometrics, turning movement counts, and the existing traffic control. Existing signal timing data was provided by the City of Rice Lake and included in the analysis. Table 1 summarizes the weekday AM and PM peak hour traffic operating conditions for the existing traffic. All intersection movements currently operate at LOS C or better, and overall all intersections operate at LOS A. SimTraffic outputs are included in Attachment A.

Table 1
Existing Conditions LOS, by Movement

Intersection	Traffic Control	Peak Hour	Level of Service (Delay sec/veh)												Overall Intersection
			Eastbound			Westbound			Northbound			Southbound			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Main Street & Messenger Street	Traffic Signal Control	AM	C (30.5)		C (29.9)		C (33.6)			A (1.5)			A (1.4)		A (5.8)
		PM	C (28.6)		C (28.1)		C (30.4)			A (2.2)			A (2.0)		A (6.3)
Main Street & Eau Claire Street	Two-way Stop Control	AM	B (10.6)				B (13.0)			A (0.5)			A (0.7)		A (1.4)
		PM	B (11.3)				C (18.8)			A (0.4)			A (0.3)		A (1.2)
Main Street & Marshall Street	Traffic Signal Control	AM	C (32.3)		C (31.9)	C (32.5)		C (31.9)		A (1.0)			A (1.1)		A (4.6)
		PM	C (30.7)		C (30.5)	C (30.9)		C (30.4		A (1.3)			A (1.4)		A (4.2)

Table 2
Existing Conditions Queues, by Movement

Intersection	Traffic Control	Peak Hour	Max Queue (feet)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Main Street & Messenger Street	Two-way Stop Control	AM	49		47	77			61		33	50		50
		PM	55		53	100			96		52	55		63
Main Street & Eau Claire Street	Traffic Signal Control	AM	43			43			28			30		
		PM	45			47			32			22		
Main Street & Marshall Street	Two-way Stop Control	AM	32		43	40		42	34		20	37		12
		PM	31		52	43		21	56		40	46		19

Existing 95th percentile queues are shown in Table 2. Currently no queues extend more than 100 feet in either the AM or PM peaks.

Existing Crash Review
Crashes were reviewed for a duration of 5 years, from January 2017 through December of 2021. The segment crash rate was computed and standardized to a rate of crashes per one hundred million vehicle miles traveled (HMVMT) according to the guidelines provided in the WisDOT memo "2020 Statewide Average Crash Rates" dated October 7, 2021, and it was then compared to the rate provided in the memo for the Urban Streets in the Local Road Group. A summary of results for the mainline segment can be found in Attachment 1.

A total of 38 crashes occurred on the Main Street corridor from 2017 to 2021. The crash rate on the Main Street mainline was calculated to be 527.97 crashes per HMVMT, which is higher than the statewide average (335.49 crashes/HMVMT) for its peer group as well as the upper control limit. No fatal crashes and 5 injury crashes occurred on the corridor for the years that were studied.

Injury crashes are broken down by WisDOT into three different types: type A, type B, and type C. There injury types are determined by the reporting police officer at the scene of the crash. The three types of injuries can be described as follows: type A – incapacitating, type B – non-incapacitating, type C – possible injury. The corridor experienced zero (0) type A crashes, two (2) type B crashes, and three (3) type C crashes. When compared to the statewide averages for fatal, type A, and type B injuries the segment crash rate is below the statewide average.

Right Angle (14) crashes and rear end crashes (14) were the most common types of crashes on the corridor. Sideswipe Same (7) were the third most common crash type for the corridor. See Attachment 1 for a summary of crash types.

Six intersections along the Main Street corridor were analyzed in detail.

Intersection crash rates were computed according to a similar equation that ignores length and standardizes to a rate of one million entering vehicles (MEV). Intersection crash rates of 1.5 per MEV or higher are flagged for possible safety improvements. Total Entering volume was determined via AADT volumes provided in the WisDOT TCMap.

The Main Street & Water Street intersection had 2 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.09 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. Neither of the crashes involved injuries. Both of the crashes involved parking maneuvers at the intersection.

The Main Street & Highland Street intersection had 4 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.18 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. None of the crashes involved injuries. Three of the crashes were angle crashes and the remaining crash was a sideswipe crash.

The Main Street & Messenger Street intersection had 5 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.22 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. One of the 5 crashes involved injuries. Three of the crashes at the intersection were angle crashes. The remaining two (2) crashes were sideswipe crashes.

The Main Street & Newton Street intersection had 10 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.52 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. Two of the 10 crashes involved injuries. Six of the crashes at the intersection were rear end crashes, three (3) were angle crashes, and the remaining crash involved a pedestrian.

The Main Street & Eau Claire Street intersection had 9 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.46 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. One of the 9 crashes involved injuries. Six of the crashes at the intersection were rear end crashes, two (2) were sideswipe crashes, and the remaining crash involved a parking maneuver.

The Main Street & Marshall Street intersection had 8 crashes occur during the five-year study period. Based on the number of crashes a rate of 0.43 crashes/MEV was calculated. This value falls below the threshold that triggers the need for safety enhancement. None of the crashes involved injuries. Four of the crashes at the intersection were angle crashes, two (2) were sideswipe crashes, and two (2) were rear end crashes.

The crashes discussed above are all common types of crashes on urban signalized corridors. As part of the proposed improvement project the following safety enhancements are included:

- Reduction of through lanes from 2 to 1. This enhancement will target sideswipe type crashes.
- Installation of designated left turn lanes. This enhancement will target rear end crashes.
- Traffic signal improvements. This enhancement will target rear end crashes
- Pedestrian bump-outs. This enhancement will target pedestrian safety/crashes.

Proposed Conditions

As noted above, the proposed configuration will change the configuration of Main Street. In general, under the proposed configuration there will be a single travel lane with NB/SB traffic separated by a raised median. All intersections within the project limits will have designated left turn lanes. In addition to the changes along Main Street, the east and west approaches of Marshall Street will have a single shared left/through/right lane. On street parking will be maintained as part of the project.

As can be seen in Table 3, all intersection movements continue to operate at LOS C or better. Overall all intersections continue to operate at LOS A.

Table 3
Proposed Conditions LOS, by Movement

Intersection	Traffic Control	Peak Hour	Level of Service (Delay sec/veh)												Overall Intersection
			Eastbound			Westbound			Northbound			Southbound			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Main Street & Messenger Street	Traffic Signal Control	AM	C (28.5)		C (29.1)		C (29.4)		A (2.8)	A (2.6)		A (3.4)	A (4.6)		A (7.2)
		PM	C (28.1)		C (29.7)		C (29.7)		A (2.9)	A (3.4)		A (1.5)	A (2.7)		A (6.3)
Main Street & Eau Claire Street	Two-way Stop Control	AM	B (11.3)				B (14.4)		A (7.9)	A (0.0)		A (8.0)	A (0.0)		A (1.4)
		PM	B (11.3)				C (18.8)		A (0.4)	A (0.0)		A (0.3)	A (0.0)		A (1.2)
Main Street & Marshall Street	Traffic Signal Control	AM	C (30.0)				C (30.0)		A (2.3)	A (0.3)		A (3.0)	A (3.7)		A (5.2)
		PM	C (30.4)				C (29.2)		A (2.6)	A (2.5)		A (3.6)	A (4.8)		A (4.2)

Table 4
Proposed Conditions Queues, by Movement

Intersection	Traffic Control	Peak Hour	Max Queue (feet)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Main Street & Messenger Street	Two-way Stop Control	AM	46		48		75		31	75		15	86	
		PM	53		60		97		40	112		13	127	
Main Street & Eau Claire Street	Traffic Signal Control	AM	44				42		25			33		
		PM	48				46		28			22		
Main Street & Marshall Street	Two-way Stop Control	AM	52				55		27	59		18	46	
		PM	69				45		52	95		15	72	

Evaluation of Proposed Conditions (2041 Volumes)
In order to evaluate future traffic a 1 percent linear growth rate was applied to the existing turning movement counts to establish 2041 future volumes. These volumes were then entered into the proposed geometric Synchro model. As can be seen in Table 5 all movements, with the exception of the WB approach at Eau Claire Street (LOS D), continue to operate at LOS C or better. All intersections overall LOS continues at LOS A.

Table 5
Proposed Conditions (2041) LOS, by Movement

Intersection	Traffic Control	Peak Hour	Level of Service (Delay sec/veh)												Overall Intersection
			Eastbound			Westbound			Northbound			Southbound			
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Main Street & Messenger Street	Traffic Signal Control	AM	C (28.3)	C (28.9)		C (29.5)			A (2.7)	A (2.9)		A (1.1)	A (1.8)		A (6.3)
		PM	C (28.1)	C (30.1)		C (30.6)			A (2.9)	A (4.0)		A (0.0)	A (1.4)		A (7.0)
Main Street & Eau Claire Street	Two-way Stop Control	AM	B (12.0)			C (18.0)			A (8.1)	A (0.0)		A (8.3)	A (0.0)		A (1.4)
		PM	C (16.1)			D (31.3)			A (8.5)	A (0.0)		A (8.8)	A (0.0)		A (1.7)
Main Street & Marshall Street	Traffic Signal Control	AM	C (29.7)			C (29.7)			A (2.5)	A (2.2)		A (3.2)	A (4.2)		A (6.1)
		PM	C (30.3)			C (28.9)			A (3.0)	A (6.8)		A (4.9)	A (5.5)		A (8.3)

Table 6
Proposed Conditions (2041) Queues, by Movement

Intersection	Traffic Control	Peak Hour	Max Queue (feet)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Main Street & Messenger Street	Two-way Stop Control	AM	54		49	87			35	86		12	97	
		PM	60		63	108			64	156		20	155	
Main Street & Eau Claire Street	Traffic Signal Control	AM	45			46			30			34		
		PM	49			46			33			23		
Main Street & Marshall Street	Two-way Stop Control	AM	56			59			43	78		23	61	
		PM	62			54			65	119		14	92	

95th percentile queues were also analyzed for proposed geometrics and future volumes. The longest anticipated queue is 156 feet. No queues are anticipated to block any adjacent intersection movements.

Conclusion

Based on the operational analysis it is anticipated that the proposed project geometrics will continue to operate with acceptable LOS. Reducing the number of travel lanes and adding separation to the opposing travel lanes will provide potential reductions in sideswipe crashes. In addition, the creation of designated left turn lanes at the signalized intersections will provide a potential reduction in rear end crashes. Finally, pedestrian bump outs will reduce the crossing distance and have a positive impact on pedestrian safety.

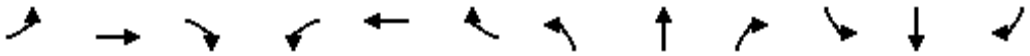
jmw
Attachment 1 – Summary Crash Table
Attachment 2 – Synchro/SimTraffic Operational Outputs

ATTACHMENT 1

Main Street - Water Street to Humbird Street

Year	Accident Severity				Manner of Collision									Rate	
	Total	Property Damage	Injury	Fatality	Total	Rear-end	Right Angle	Side-swipe Same	Side-Swipe Opposite	Head-on	Other				
2017	**11**	10	1	0	**11**	5	3	3	0	0	0				
2018	**10**	8	2	0	**10**	3	4	3	0	0	0				Comparison Rate
2019	**1**	0	1	0	**1**	1	0	0	0	0	0	Segment Length	0.38		UCL
2020	**6**	5	1	0	**6**	3	1	1	0	0	1				403.76
2021	**10**	10	0	0	**10**	2	6	0	0	0	2				
Total*	**38**	**33**	**5**	**0**	**38**	**14**	**14**	**7**	**0**	**0**	**3**	38	AADT	527.97	Statewide Rate
	100%	**87%**	**13%**	**0%**	**100%**	**37%**	**37%**	**18%**	**0%**	**0%**	**8%**	**100%**	10517		335.49

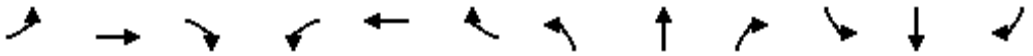
ATTACHMENT 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	35	40	15	5	30	335	10	5	285	10
Future Volume (vph)	15	5	35	40	15	5	30	335	10	5	285	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.2			4.2	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		0.99			1.00			0.99	
Flt Protected		0.96	1.00		0.97			1.00			1.00	
Satd. Flow (prot)		1794	1583		1783			3511			3519	
Flt Permitted		0.85	1.00		0.79			0.91			0.95	
Satd. Flow (perm)		1583	1583		1448			3222			3349	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	5	38	43	16	5	33	364	11	5	310	11
RTOR Reduction (vph)	0	0	35	0	5	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	21	3	0	59	0	0	407	0	0	325	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		5.4	5.4		5.4			56.4			56.4	
Effective Green, g (s)		5.4	5.4		5.4			56.4			56.4	
Actuated g/C Ratio		0.08	0.08		0.08			0.81			0.81	
Clearance Time (s)		4.0	4.0		4.0			4.2			4.2	
Vehicle Extension (s)		2.0	2.0		2.0			3.5			3.5	
Lane Grp Cap (vph)		122	122		111			2596			2698	
v/s Ratio Prot												
v/s Ratio Perm		0.01	0.00		c0.04			c0.13			0.10	
v/c Ratio		0.17	0.02		0.54			0.16			0.12	
Uniform Delay, d1		30.2	29.9		31.1			1.5			1.5	
Progression Factor		1.00	1.00		1.00			1.00			0.88	
Incremental Delay, d2		0.2	0.0		2.5			0.0			0.1	
Delay (s)		30.5	29.9		33.6			1.5			1.4	
Level of Service		C	C		C			A			A	
Approach Delay (s)		30.1			33.6			1.5			1.4	
Approach LOS		C			C			A			A	

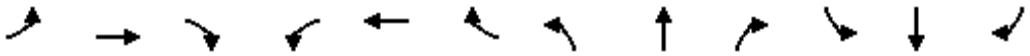
Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	25	10	5	20	25	240	20	10	240	5
Future Volume (vph)	5	5	25	10	5	20	25	240	20	10	240	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.2			4.2	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frt		1.00	0.85		1.00	0.85		0.99			1.00	
Flt Protected		0.98	1.00		0.97	1.00		1.00			1.00	
Satd. Flow (prot)		1854	1615		1837	1615		3487			3557	
Flt Permitted		0.94	1.00		1.00	1.00		0.92			0.94	
Satd. Flow (perm)		1781	1615		1900	1615		3220			3362	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	5	5	27	11	5	21	27	255	21	11	255	5
RTOR Reduction (vph)	0	0	26	0	0	20	0	3	0	0	0	0
Lane Group Flow (vph)	0	10	1	0	16	1	0	300	0	0	271	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	2%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)		3.2	3.2		3.2	3.2		58.6			58.6	
Effective Green, g (s)		3.2	3.2		3.2	3.2		58.6			58.6	
Actuated g/C Ratio		0.05	0.05		0.05	0.05		0.84			0.84	
Clearance Time (s)		4.0	4.0		4.0	4.0		4.2			4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0		3.5			3.5	
Lane Grp Cap (vph)		81	73		86	73		2695			2814	
v/s Ratio Prot												
v/s Ratio Perm		0.01	0.00		c0.01	0.00		c0.09			0.08	
v/c Ratio		0.12	0.02		0.19	0.01		0.11			0.10	
Uniform Delay, d1		32.1	31.9		32.1	31.9		1.0			1.0	
Progression Factor		1.00	1.00		1.00	1.00		0.94			1.00	
Incremental Delay, d2		0.3	0.0		0.4	0.0		0.0			0.1	
Delay (s)		32.3	31.9		32.5	31.9		1.0			1.1	
Level of Service		C	C		C	C		A			A	
Approach Delay (s)		32.0			32.2			1.0			1.1	
Approach LOS		C			C			A			A	

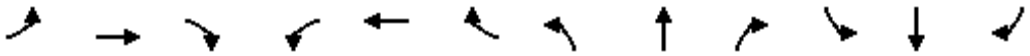
Intersection Summary			
HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.12		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	20	15	0	10	20	280	50	25	275	10
Future Volume (Veh/h)	0	5	20	15	0	10	20	280	50	25	275	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	5	21	16	0	11	21	298	53	27	293	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								656			338	
pX, platoon unblocked												
vC, conflicting volume	554	746	152	590	724	176	304			351		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554	746	152	590	724	176	304			351		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	98	96	100	99	98			98		
cM capacity (veh/h)	401	331	873	370	340	844	1254			1204		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	26	27	170	202	174	158
Volume Left	0	16	21	0	27	0
Volume Right	21	11	0	53	0	11
cSH	664	480	1254	1700	1204	1700
Volume to Capacity	0.04	0.06	0.02	0.12	0.02	0.09
Queue Length 95th (ft)	3	4	1	0	2	0
Control Delay (s)	10.6	13.0	1.1	0.0	1.4	0.0
Lane LOS	B	B	A		A	
Approach Delay (s)	10.6	13.0	0.5		0.7	
Approach LOS	B	B				

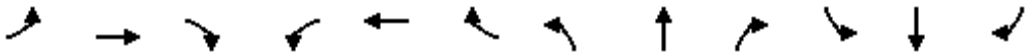
Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	5	70	55	10	19	60	455	25	5	410	20
Future Volume (vph)	20	5	70	55	10	19	60	455	25	5	410	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.2			4.2	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frt		1.00	0.85		0.97			0.99			0.99	
Flt Protected		0.96	1.00		0.97			0.99			1.00	
Satd. Flow (prot)		1792	1583		1749			3495			3513	
Flt Permitted		0.80	1.00		0.78			0.86			0.95	
Satd. Flow (perm)		1490	1583		1417			3008			3340	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	22	6	79	62	11	21	67	511	28	6	461	22
RTOR Reduction (vph)	0	0	71	0	19	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	28	8	0	75	0	0	604	0	0	487	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8			6			2		
Actuated Green, G (s)		7.5	7.5		7.5			54.3			54.3	
Effective Green, g (s)		7.5	7.5		7.5			54.3			54.3	
Actuated g/C Ratio		0.11	0.11		0.11			0.78			0.78	
Clearance Time (s)		4.0	4.0		4.0			4.2			4.2	
Vehicle Extension (s)		2.0	2.0		2.0			3.5			3.5	
Lane Grp Cap (vph)		159	169		151			2333			2590	
v/s Ratio Prot												
v/s Ratio Perm		0.02	0.01		c0.05			c0.20			0.15	
v/c Ratio		0.18	0.05		0.50			0.26			0.19	
Uniform Delay, d1		28.4	28.1		29.5			2.2			2.1	
Progression Factor		1.00	1.00		1.00			1.00			0.90	
Incremental Delay, d2		0.2	0.0		0.9			0.0			0.2	
Delay (s)		28.6	28.1		30.4			2.2			2.0	
Level of Service		C	C		C			A			A	
Approach Delay (s)		28.2			30.4			2.2			2.0	
Approach LOS		C			C			A			A	

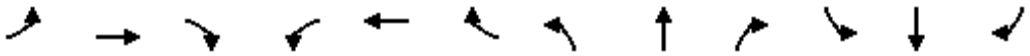
Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	5	55	15	0	5	55	385	20	5	320	5
Future Volume (vph)	5	5	55	15	0	5	55	385	20	5	320	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0		4.2			4.2	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95			0.95	
Frt		1.00	0.85		1.00	0.85		0.99			1.00	
Flt Protected		0.98	1.00		0.95	1.00		0.99			1.00	
Satd. Flow (prot)		1765	1538		1805	1615		3529			3564	
Flt Permitted		0.83	1.00		0.83	1.00		0.88			0.95	
Satd. Flow (perm)		1510	1538		1583	1615		3122			3391	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	5	57	15	0	5	57	397	21	5	330	5
RTOR Reduction (vph)	0	0	53	0	0	5	0	2	0	0	1	0
Lane Group Flow (vph)	0	10	4	0	15	0	0	473	0	0	339	0
Heavy Vehicles (%)	5%	5%	5%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases		4			8		1	6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)		4.8	4.8		4.8	4.8		57.0			57.0	
Effective Green, g (s)		4.8	4.8		4.8	4.8		57.0			57.0	
Actuated g/C Ratio		0.07	0.07		0.07	0.07		0.81			0.81	
Clearance Time (s)		4.0	4.0		4.0	4.0		4.2			4.2	
Vehicle Extension (s)		2.0	2.0		2.0	2.0		3.5			3.5	
Lane Grp Cap (vph)		103	105		108	110		2542			2761	
v/s Ratio Prot												
v/s Ratio Perm		0.01	0.00		c0.01	0.00		c0.15			0.10	
v/c Ratio		0.10	0.04		0.14	0.00		0.19			0.12	
Uniform Delay, d1		30.6	30.4		30.7	30.4		1.4			1.3	
Progression Factor		1.00	1.00		1.00	1.00		0.92			1.00	
Incremental Delay, d2		0.2	0.1		0.2	0.0		0.0			0.1	
Delay (s)		30.7	30.5		30.9	30.4		1.3			1.4	
Level of Service		C	C		C	C		A			A	
Approach Delay (s)		30.5			30.7			1.3			1.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.7
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	30	15	5	5	20	455	25	10	375	5
Future Volume (Veh/h)	0	5	30	15	5	5	20	455	25	10	375	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	5	33	16	5	5	22	495	27	11	408	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								656			338	
pX, platoon unblocked												
vC, conflicting volume	732	998	206	814	988	261	413			522		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	732	998	206	814	988	261	413			522		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	96	94	98	99	98			99		
cM capacity (veh/h)	299	238	806	252	242	744	1150			1048		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	38	26	270	274	215	209
Volume Left	0	16	22	0	11	0
Volume Right	33	5	0	27	0	5
cSH	614	286	1150	1700	1048	1700
Volume to Capacity	0.06	0.09	0.02	0.16	0.01	0.12
Queue Length 95th (ft)	5	7	1	0	1	0
Control Delay (s)	11.3	18.8	0.8	0.0	0.5	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	11.3	18.8	0.4		0.3	
Approach LOS	B	C				

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	4.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.0	0.3	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Total Del/Veh (s)	30.5	31.7	4.2	30.7	33.8	6.6	4.8	2.0	0.6	4.9	1.6	1.0

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	1.1
Total Del/Veh (s)	5.0

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.3	4.1	0.1	0.1	4.3	0.0	0.0	0.0	0.2	0.1	0.2
Total Delay (hr)	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	41.4	36.0	4.3	41.9	34.6	4.3	4.1	0.9	0.3	3.0	1.0	0.4

6: Main Street & Marshall Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	0.5
Total Del/Veh (s)	2.8

9: Main Street & Eau Claire Street Performance by movement

Movement	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	8.7	3.0	7.2	3.1	3.3	0.8	0.6	2.9	0.5	0.2	1.1

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.5
Total Delay (hr)	1.9
Total Del/Veh (s)	7.5

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	LT	TR	LT	TR
Maximum Queue (ft)	57	54	87	80	51	68	68
Average Queue (ft)	19	20	40	26	9	18	15
95th Queue (ft)	49	47	77	61	33	50	50
Link Distance (ft)	403		278	854	854	599	599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Intersection: 6: Main Street & Marshall Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	TR	LT	TR
Maximum Queue (ft)	40	43	52	47	45	29	54	28
Average Queue (ft)	9	18	13	15	11	4	11	1
95th Queue (ft)	32	43	40	42	34	20	37	12
Link Distance (ft)	571		525		270	270	772	772
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		105		50				
Storage Blk Time (%)			2	0				
Queuing Penalty (veh)			0	0				

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	40	36	44	44
Average Queue (ft)	18	18	6	7
95th Queue (ft)	43	43	28	30
Link Distance (ft)	511	564	599	270
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.3	4.0	0.2	0.1	0.2	0.3	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.1	0.5	0.1	0.1	0.1	0.4	0.0	0.0	0.2	0.0
Total Del/Veh (s)	29.4	26.1	4.7	31.5	28.8	13.6	6.2	3.1	0.8	5.2	1.9	0.9

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	1.7
Total Del/Veh (s)	5.3

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.4	0.1	4.1	0.1	4.5	0.0	0.0	0.0	0.2	0.1	0.1	0.3
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.6
Total Del/Veh (s)	34.0	30.0	4.3	33.6	5.1	4.2	1.3	0.5	6.7	1.1	0.8	2.5

9: Main Street & Eau Claire Street Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	7.7	2.9	7.3	10.4	2.5	4.1	1.0	0.5	3.4	0.4	0.2	1.1

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.6
Total Delay (hr)	2.8
Total Del/Veh (s)	8.2

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	LT	TR	LT	TR
Maximum Queue (ft)	65	66	123	129	85	56	68
Average Queue (ft)	22	28	51	49	16	22	26
95th Queue (ft)	55	53	100	96	52	55	63
Link Distance (ft)	403		278	854	854	599	599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75					
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Intersection: 6: Main Street & Marshall Street

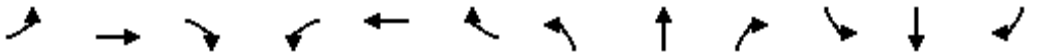
Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	TR	LT	TR
Maximum Queue (ft)	39	56	48	31	73	56	62	32
Average Queue (ft)	9	28	15	4	23	11	16	4
95th Queue (ft)	31	52	43	21	56	40	46	19
Link Distance (ft)	571		525		270	270	772	772
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		105		50				
Storage Blk Time (%)			1	0				
Queuing Penalty (veh)			0	0				

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	40	44	53	36
Average Queue (ft)	21	19	7	4
95th Queue (ft)	45	47	32	22
Link Distance (ft)	511	564	599	270
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	35	40	15	5	30	335	10	5	285	10
Future Volume (veh/h)	15	5	35	40	15	5	30	335	10	5	285	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	5	38	43	16	5	33	364	11	5	310	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	52	165	176	57	12	835	1407	43	797	1236	44
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.04	0.78	0.78	0.69	0.69	0.69
Sat Flow, veh/h	1098	503	1585	863	546	119	1781	1806	55	1008	1795	64
Grp Volume(v), veh/h	21	0	38	64	0	0	33	0	375	5	0	321
Grp Sat Flow(s),veh/h/ln	1601	0	1585	1528	0	0	1781	0	1861	1008	0	1859
Q Serve(g_s), s	0.0	0.0	1.5	1.6	0.0	0.0	0.4	0.0	3.9	0.1	0.0	4.6
Cycle Q Clear(g_c), s	0.7	0.0	1.5	2.6	0.0	0.0	0.4	0.0	3.9	0.1	0.0	4.6
Prop In Lane	0.76		1.00	0.67		0.08	1.00		0.03	1.00		0.03
Lane Grp Cap(c), veh/h	257	0	165	245	0	0	835	0	1449	797	0	1280
V/C Ratio(X)	0.08	0.00	0.23	0.26	0.00	0.00	0.04	0.00	0.26	0.01	0.00	0.25
Avail Cap(c_a), veh/h	611	0	543	598	0	0	928	0	1449	797	0	1280
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	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	28.8	29.2	0.0	0.0	2.8	0.0	2.1	3.4	0.0	4.1
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.5
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	0.3	0.0	0.6	1.0	0.0	0.0	0.1	0.0	0.8	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	29.1	29.4	0.0	0.0	2.8	0.0	2.6	3.4	0.0	4.6
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		59			64			408			326	
Approach Delay, s/veh		28.9			29.4			2.6			4.6	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.3	52.4		11.3		58.7		11.3				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 28		24.0		* 38		24.0				
Max Q Clear Time (g_c+I1), s	2.4	6.6		3.5		5.9		4.6				
Green Ext Time (p_c), s	0.0	2.3		0.1		3.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		7.2	
HCM 6th LOS		A	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	25	10	5	20	25	240	20	10	240	5
Future Volume (veh/h)	5	5	25	10	5	20	25	240	20	10	240	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1900	1900	1900	1900	1900	1900	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	5	5	27	11	5	21	27	255	21	11	255	5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	2	2	2	1	1	1
Cap, veh/h	68	29	105	91	37	81	909	1356	112	893	1309	26
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.07	1.00	1.00	0.71	0.71	0.71
Sat Flow, veh/h	111	334	1200	283	422	926	1781	1705	140	1112	1843	36
Grp Volume(v), veh/h	37	0	0	37	0	0	27	0	276	11	0	260
Grp Sat Flow(s),veh/h/ln	1645	0	0	1632	0	0	1781	0	1845	1112	0	1879
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	3.3
Cycle Q Clear(g_c), s	1.4	0.0	0.0	1.4	0.0	0.0	0.3	0.0	0.0	0.2	0.0	3.3
Prop In Lane	0.14		0.73	0.30		0.57	1.00		0.08	1.00		0.02
Lane Grp Cap(c), veh/h	202	0	0	209	0	0	909	0	1468	893	0	1335
V/C Ratio(X)	0.18	0.00	0.00	0.18	0.00	0.00	0.03	0.00	0.19	0.01	0.00	0.19
Avail Cap(c_a), veh/h	591	0	0	588	0	0	1012	0	1468	893	0	1335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	0.0	29.8	0.0	0.0	2.3	0.0	0.0	3.0	0.0	3.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
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	0.6	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	0.0	0.0	30.0	0.0	0.0	2.3	0.0	0.3	3.0	0.0	3.7
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		37			37			303			271	
Approach Delay, s/veh		30.0			30.0			0.5			3.7	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.0	53.9		10.1		59.9		10.1				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 29		23.0		* 39		23.0				
Max Q Clear Time (g_c+I1), s	2.3	5.3		3.4		2.0		3.4				
Green Ext Time (p_c), s	0.0	1.9		0.1		2.2		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	20	15	0	10	20	280	50	25	275	10
Future Vol, veh/h	0	5	20	15	0	10	20	280	50	25	275	10
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	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	0	5	21	16	0	11	21	298	53	27	293	11

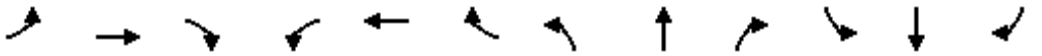
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	725	746	299	733	725	325	304	0	0	351	0	0
Stage 1	353	353	-	367	367	-	-	-	-	-	-	-
Stage 2	372	393	-	366	358	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	344	745	339	354	721	1257	-	-	1208	-	-
Stage 1	668	634	-	657	626	-	-	-	-	-	-	-
Stage 2	653	609	-	657	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	328	331	745	316	340	721	1257	-	-	1208	-	-
Mov Cap-2 Maneuver	328	331	-	316	340	-	-	-	-	-	-	-
Stage 1	657	620	-	646	615	-	-	-	-	-	-	-
Stage 2	633	599	-	619	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	14.4	0.5	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1257	-	-	596	408	1208	-	-
HCM Lane V/C Ratio	0.017	-	-	0.045	0.065	0.022	-	-
HCM Control Delay (s)	7.9	-	-	11.3	14.4	8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0.1	-	-

HCM 6th Signalized Intersection Summary
3: Main Street & Messenger Street

09/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	70	55	10	19	60	455	25	5	410	20
Future Volume (veh/h)	20	5	70	55	10	19	60	455	25	5	410	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	6	79	62	11	21	67	511	28	6	461	22
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	51	178	177	36	37	770	1354	74	673	1166	56
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.06	0.77	0.77	0.88	0.88	0.88
Sat Flow, veh/h	1190	454	1585	817	320	327	1781	1757	96	866	1771	84
Grp Volume(v), veh/h	28	0	79	94	0	0	67	0	539	6	0	483
Grp Sat Flow(s),veh/h/ln	1644	0	1585	1464	0	0	1781	0	1853	866	0	1855
Q Serve(g_s), s	0.0	0.0	3.3	3.2	0.0	0.0	0.8	0.0	6.6	0.1	0.0	3.5
Cycle Q Clear(g_c), s	1.0	0.0	3.3	4.1	0.0	0.0	0.8	0.0	6.6	0.1	0.0	3.5
Prop In Lane	0.79		1.00	0.66		0.22	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	276	0	178	249	0	0	770	0	1428	673	0	1222
V/C Ratio(X)	0.10	0.00	0.45	0.38	0.00	0.00	0.09	0.00	0.38	0.01	0.00	0.40
Avail Cap(c_a), veh/h	613	0	543	576	0	0	824	0	1428	673	0	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	29.0	29.3	0.0	0.0	2.9	0.0	2.6	1.5	0.0	1.7
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.8	0.0	0.0	1.0
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	0.4	0.0	1.2	1.5	0.0	0.0	0.2	0.0	1.5	0.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	0.0	29.7	29.7	0.0	0.0	2.9	0.0	3.4	1.5	0.0	2.7
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		107			94			606			489	
Approach Delay, s/veh		29.3			29.7			3.3			2.6	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.9	50.3		11.8		58.2		11.8				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 28		24.0		* 38		24.0				
Max Q Clear Time (g_c+I1), s	2.8	5.5		5.3		8.6		6.1				
Green Ext Time (p_c), s	0.0	3.8		0.2		4.7		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		7.1	
HCM 6th LOS		A	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	55	15	0	5	55	385	20	5	320	5
Future Volume (veh/h)	5	5	55	15	0	5	55	385	20	5	320	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1826	1826	1826	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	5	5	57	15	0	5	57	397	21	5	330	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	0	0	0	1	1	1	1	1	1
Cap, veh/h	61	17	124	189	13	37	852	1401	74	769	1263	19
Arrive On Green	0.09	0.09	0.09	0.09	0.00	0.09	0.06	0.79	0.79	0.68	0.68	0.68
Sat Flow, veh/h	56	178	1334	1057	138	398	1795	1774	94	976	1852	28
Grp Volume(v), veh/h	67	0	0	20	0	0	57	0	418	5	0	335
Grp Sat Flow(s),veh/h/ln	1568	0	0	1593	0	0	1795	0	1868	976	0	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	4.2	0.1	0.0	4.8
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.7	0.0	0.0	0.6	0.0	4.2	0.1	0.0	4.8
Prop In Lane	0.07		0.85	0.75		0.25	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	201	0	0	239	0	0	852	0	1475	769	0	1283
V/C Ratio(X)	0.33	0.00	0.00	0.08	0.00	0.00	0.07	0.00	0.28	0.01	0.00	0.26
Avail Cap(c_a), veh/h	566	0	0	572	0	0	916	0	1475	769	0	1283
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.0	0.0	0.0	29.1	0.0	0.0	2.6	0.0	2.0	3.6	0.0	4.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
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	1.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.8	0.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	0.0	29.2	0.0	0.0	2.6	0.0	2.5	3.6	0.0	4.8
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		67			20			475			340	
Approach Delay, s/veh		30.4			29.2			2.5			4.8	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.5	52.0		10.5		59.5		10.5				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 29		23.0		* 39		23.0				
Max Q Clear Time (g_c+I1), s	2.6	6.8		4.8		6.2		2.7				
Green Ext Time (p_c), s	0.0	2.4		0.2		3.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		6.0
HCM 6th LOS		A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	0	5	30	15	5	5	20	455	25	10	375	5
Future Vol, veh/h	0	5	30	15	5	5	20	455	25	10	375	5
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	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	0	5	33	16	5	5	22	495	27	11	408	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	991	999	411	1005	988	509	413	0	0	522	0	0
Stage 1	433	433	-	553	553	-	-	-	-	-	-	-
Stage 2	558	566	-	452	435	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	227	245	645	222	249	568	1151	-	-	1050	-	-
Stage 1	605	585	-	521	518	-	-	-	-	-	-	-
Stage 2	518	511	-	591	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	216	238	645	202	242	568	1151	-	-	1050	-	-
Mov Cap-2 Maneuver	216	238	-	202	242	-	-	-	-	-	-	-
Stage 1	594	579	-	511	508	-	-	-	-	-	-	-
Stage 2	498	501	-	550	578	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	21.8	0.3	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1151	-	-	518	241	1050	-	-
HCM Lane V/C Ratio	0.019	-	-	0.073	0.113	0.01	-	-
HCM Control Delay (s)	8.2	-	-	12.5	21.8	8.5	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0	-	-

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	4.0	0.1	0.1	0.2	3.5	0.3	0.3	0.0	0.0	0.0
Total Delay (hr)	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.0
Total Del/Veh (s)	30.3	31.6	5.3	31.3	32.7	6.4	4.2	2.4	1.5	5.4	2.2	2.7

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.5
Total Delay (hr)	1.1
Total Del/Veh (s)	5.1

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	3.7	0.2	0.3
Total Delay (hr)	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	43.8	37.2	6.4	35.2	41.3	8.3	3.5	1.6	0.6	3.6	1.2	0.8

6: Main Street & Marshall Street Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.2
Total Delay (hr)	0.6
Total Del/Veh (s)	3.4

9: Main Street & Eau Claire Street Performance by movement

Movement	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	9.4	3.7	8.9	3.7	3.5	1.4	0.9	3.3	0.6	0.3	1.5

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.6
Total Delay (hr)	2.2
Total Del/Veh (s)	8.8

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	56	56	87	37	107	18	123
Average Queue (ft)	16	20	38	9	30	2	32
95th Queue (ft)	46	48	75	31	75	15	86
Link Distance (ft)	409		284		853		599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75		100		75	
Storage Blk Time (%)	0	0			0		1
Queuing Penalty (veh)	0	0			0		0

Intersection: 6: Main Street & Marshall Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	53	65	35	90	31	60
Average Queue (ft)	24	25	6	17	3	13
95th Queue (ft)	52	55	27	59	18	46
Link Distance (ft)	577	531		282		784
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	48	36	31	43
Average Queue (ft)	18	17	5	9
95th Queue (ft)	44	42	25	33
Link Distance (ft)	517	570		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			75	75
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.4	3.9	0.1	0.1	0.2	3.4	0.6	0.4	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.1	0.5	0.1	0.1	0.1	0.4	0.0	0.0	0.4	0.0
Total Del/Veh (s)	30.4	28.1	6.4	32.2	30.6	16.1	5.4	3.6	2.6	7.9	3.8	1.7

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.7
Total Delay (hr)	2.0
Total Del/Veh (s)	6.2

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.4	0.0	0.0	0.0	4.0	0.3	0.2	0.1
Total Delay (hr)	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.8
Total Del/Veh (s)	37.9	36.2	7.6	36.2	8.9	4.0	1.9	1.3	7.6	1.9	1.0	3.4

9: Main Street & Eau Claire Street Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	13.6	4.5	10.4	10.9	4.3	4.4	1.4	0.9	4.3	0.7	0.4	1.5

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.7
Total Delay (hr)	3.6
Total Del/Veh (s)	10.4

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	65	80	126	43	149	30	157
Average Queue (ft)	20	32	50	18	47	2	58
95th Queue (ft)	53	60	97	40	112	13	127
Link Distance (ft)	409		284		853		599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75		100		75	
Storage Blk Time (%)	0	0			1		4
Queuing Penalty (veh)	0	0			0		0

Intersection: 6: Main Street & Marshall Street

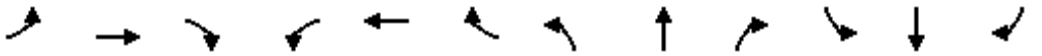
Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	86	49	84	156	19	95
Average Queue (ft)	35	17	18	32	2	26
95th Queue (ft)	69	45	52	95	15	72
Link Distance (ft)	577	531		282		784
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)				0		0
Queuing Penalty (veh)				0		0

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	57	45	31	31
Average Queue (ft)	22	19	7	4
95th Queue (ft)	48	46	28	22
Link Distance (ft)	517	570		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			75	75
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	5	40	50	20	5	35	405	10	5	345	10
Future Volume (veh/h)	20	5	40	50	20	5	35	405	10	5	345	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	5	43	54	22	5	38	440	11	5	375	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	42	172	179	62	10	833	1407	35	742	1229	36
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.04	0.77	0.77	0.90	0.90	0.90
Sat Flow, veh/h	1221	389	1585	859	575	94	1781	1817	45	940	1808	53
Grp Volume(v), veh/h	27	0	43	81	0	0	38	0	451	5	0	386
Grp Sat Flow(s),veh/h/ln	1610	0	1585	1529	0	0	1781	0	1862	940	0	1861
Q Serve(g_s), s	0.0	0.0	1.7	2.4	0.0	0.0	0.4	0.0	5.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	0.9	0.0	1.7	3.4	0.0	0.0	0.4	0.0	5.0	0.0	0.0	1.9
Prop In Lane	0.81		1.00	0.67		0.06	1.00		0.02	1.00		0.03
Lane Grp Cap(c), veh/h	268	0	172	251	0	0	833	0	1443	742	0	1265
V/C Ratio(X)	0.10	0.00	0.25	0.32	0.00	0.00	0.05	0.00	0.31	0.01	0.00	0.31
Avail Cap(c_a), veh/h	609	0	543	599	0	0	919	0	1443	742	0	1265
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	28.6	29.3	0.0	0.0	2.7	0.0	2.3	1.1	0.0	1.2
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.6
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	0.4	0.0	0.7	1.3	0.0	0.0	0.1	0.0	1.1	0.0	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	28.9	29.5	0.0	0.0	2.7	0.0	2.9	1.1	0.0	1.8
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		70			81			489			391	
Approach Delay, s/veh		28.7			29.5			2.9			1.8	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.6	51.8		11.6		58.4		11.6				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 28		24.0		* 38		24.0				
Max Q Clear Time (g_c+I1), s	2.4	3.9		3.7		7.0		5.4				
Green Ext Time (p_c), s	0.0	3.0		0.1		3.8		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		6.3	
HCM 6th LOS		A	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	30	10	5	25	30	290	25	10	290	5
Future Volume (veh/h)	5	5	30	10	5	25	30	290	25	10	290	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1900	1900	1900	1900	1900	1900	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	5	5	32	11	5	27	32	309	27	11	309	5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	2	2	2	1	1	1
Cap, veh/h	66	27	116	86	34	95	856	1340	117	840	1296	21
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.79	0.79	0.70	0.70	0.70
Sat Flow, veh/h	94	297	1251	237	370	1023	1781	1696	148	1053	1850	30
Grp Volume(v), veh/h	42	0	0	43	0	0	32	0	336	11	0	314
Grp Sat Flow(s),veh/h/ln	1641	0	0	1630	0	0	1781	0	1844	1053	0	1880
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	3.3	0.2	0.0	4.2
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.6	0.0	0.0	0.3	0.0	3.3	0.2	0.0	4.2
Prop In Lane	0.12		0.76	0.26		0.63	1.00		0.08	1.00		0.02
Lane Grp Cap(c), veh/h	209	0	0	215	0	0	856	0	1457	840	0	1317
V/C Ratio(X)	0.20	0.00	0.00	0.20	0.00	0.00	0.04	0.00	0.23	0.01	0.00	0.24
Avail Cap(c_a), veh/h	590	0	0	587	0	0	951	0	1457	840	0	1317
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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	0.0	29.6	0.0	0.0	2.5	0.0	1.9	3.2	0.0	3.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
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	0.7	0.0	0.0	0.1	0.0	0.6	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	0.0	0.0	29.7	0.0	0.0	2.5	0.0	2.2	3.2	0.0	4.2
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		42			43			368			325	
Approach Delay, s/veh		29.7			29.7			2.3			4.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	6.3	53.3		10.5		59.5		10.5				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 29		23.0		* 39		23.0				
Max Q Clear Time (g_c+I1), s	2.3	6.2		3.6		5.3		3.6				
Green Ext Time (p_c), s	0.0	2.3		0.1		2.7		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	25	20	0	10	25	340	60	30	330	10
Future Vol, veh/h	0	5	25	20	0	10	25	340	60	30	330	10
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	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	0	5	27	21	0	11	27	362	64	32	351	11

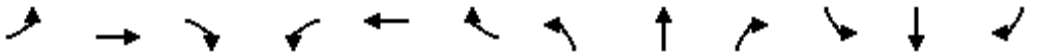
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	875	901	357	885	874	394	362	0	0	426	0	0
Stage 1	421	421	-	448	448	-	-	-	-	-	-	-
Stage 2	454	480	-	437	426	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	272	280	692	268	290	659	1197	-	-	1133	-	-
Stage 1	614	592	-	594	576	-	-	-	-	-	-	-
Stage 2	589	558	-	602	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	257	266	692	244	276	659	1197	-	-	1133	-	-
Mov Cap-2 Maneuver	257	266	-	244	276	-	-	-	-	-	-	-
Stage 1	600	575	-	580	563	-	-	-	-	-	-	-
Stage 2	566	545	-	557	573	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	18	0.5	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1197	-	-	546	309	1133	-	-
HCM Lane V/C Ratio	0.022	-	-	0.058	0.103	0.028	-	-
HCM Control Delay (s)	8.1	-	-	12	18	8.3	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0.1	-	-

HCM 6th Signalized Intersection Summary
3: Main Street & Messenger Street

09/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	5	85	65	10	25	70	550	30	5	495	25
Future Volume (veh/h)	25	5	85	65	10	25	70	550	30	5	495	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	6	96	73	11	28	79	618	34	6	556	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	41	181	173	27	38	764	1350	74	604	1150	58
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.07	0.77	0.77	1.00	1.00	1.00
Sat Flow, veh/h	1205	358	1585	767	240	335	1781	1756	97	780	1765	89
Grp Volume(v), veh/h	34	0	96	112	0	0	79	0	652	6	0	584
Grp Sat Flow(s),veh/h/ln	1563	0	1585	1342	0	0	1781	0	1853	780	0	1854
Q Serve(g_s), s	0.0	0.0	4.0	4.5	0.0	0.0	0.9	0.0	8.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	4.0	5.8	0.0	0.0	0.9	0.0	8.8	0.6	0.0	0.0
Prop In Lane	0.82		1.00	0.65		0.25	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	272	0	181	238	0	0	764	0	1424	604	0	1208
V/C Ratio(X)	0.12	0.00	0.53	0.47	0.00	0.00	0.10	0.00	0.46	0.01	0.00	0.48
Avail Cap(c_a), veh/h	601	0	543	558	0	0	809	0	1424	604	0	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	29.2	30.1	0.0	0.0	2.9	0.0	2.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.5	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.4
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	0.5	0.0	1.5	1.8	0.0	0.0	0.2	0.0	2.1	0.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	0.0	30.1	30.6	0.0	0.0	2.9	0.0	4.0	0.0	0.0	1.4
LnGrp LOS	C	A	C	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		130			112			731			590	
Approach Delay, s/veh		29.6			30.6			3.8			1.4	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.2	49.8		12.0		58.0		12.0				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 28		24.0		* 38		24.0				
Max Q Clear Time (g_c+I1), s	2.9	2.6		6.0		10.8		7.8				
Green Ext Time (p_c), s	0.0	5.1		0.2		6.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	65	20	0	5	65	465	25	5	385	5
Future Volume (veh/h)	5	5	65	20	0	5	65	465	25	5	385	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
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	1826	1826	1826	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	5	5	67	21	0	5	67	479	26	5	397	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	5	0	0	0	1	1	1	1	1	1
Cap, veh/h	59	15	135	210	10	30	792	1389	75	668	1248	16
Arrive On Green	0.10	0.10	0.10	0.10	0.00	0.10	0.04	0.53	0.53	0.67	0.67	0.67
Sat Flow, veh/h	47	156	1362	1187	102	307	1795	1772	96	901	1858	23
Grp Volume(v), veh/h	77	0	0	26	0	0	67	0	505	5	0	402
Grp Sat Flow(s),veh/h/ln	1565	0	0	1596	0	0	1795	0	1868	901	0	1881
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	11.0	0.1	0.0	6.2
Cycle Q Clear(g_c), s	3.2	0.0	0.0	0.9	0.0	0.0	0.7	0.0	11.0	3.2	0.0	6.2
Prop In Lane	0.06		0.87	0.81		0.19	1.00		0.05	1.00		0.01
Lane Grp Cap(c), veh/h	210	0	0	251	0	0	792	0	1464	668	0	1263
V/C Ratio(X)	0.37	0.00	0.00	0.10	0.00	0.00	0.08	0.00	0.34	0.01	0.00	0.32
Avail Cap(c_a), veh/h	566	0	0	571	0	0	846	0	1464	668	0	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	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	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	0.0	28.8	0.0	0.0	2.9	0.0	6.2	4.9	0.0	4.8
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.7
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	1.2	0.0	0.0	0.4	0.0	0.0	0.2	0.0	3.9	0.0	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	0.0	28.9	0.0	0.0	3.0	0.0	6.8	4.9	0.0	5.5
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		77			26			572			407	
Approach Delay, s/veh		30.3			28.9			6.4			5.5	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.9	51.2		10.9		59.1		10.9				
Change Period (Y+Rc), s	3.5	* 4.2		4.0		* 4.2		4.0				
Max Green Setting (Gmax), s	6.5	* 29		23.0		* 39		23.0				
Max Q Clear Time (g_c+I1), s	2.7	8.2		5.2		13.0		2.9				
Green Ext Time (p_c), s	0.0	2.9		0.2		4.2		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	5	5	35	20	5	5	25	550	30	10	455	5
Future Vol, veh/h	5	5	35	20	5	5	25	550	30	10	455	5
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	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	5	5	38	22	5	5	27	598	33	11	495	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1194	1205	498	1210	1191	615	500	0	0	631	0	0
Stage 1	520	520	-	669	669	-	-	-	-	-	-	-
Stage 2	674	685	-	541	522	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	165	185	576	161	189	495	1069	-	-	956	-	-
Stage 1	543	535	-	450	459	-	-	-	-	-	-	-
Stage 2	448	451	-	529	534	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	178	576	143	182	495	1069	-	-	956	-	-
Mov Cap-2 Maneuver	155	178	-	143	182	-	-	-	-	-	-	-
Stage 1	529	529	-	439	448	-	-	-	-	-	-	-
Stage 2	427	440	-	483	528	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	31.3	0.3	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	372	169	956	-	-
HCM Lane V/C Ratio	0.025	-	-	0.131	0.193	0.011	-	-
HCM Control Delay (s)	8.5	-	-	16.1	31.3	8.8	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.7	0	-	-

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.4	4.0	0.1	0.1	0.1	3.3	0.5	0.4	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.1	0.4	0.2	0.0	0.0	0.3	0.0	0.0	0.3	0.0
Total Del/Veh (s)	33.0	33.8	5.5	30.2	27.7	8.8	4.9	2.7	1.5	4.5	3.0	1.6

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.5
Total Delay (hr)	1.5
Total Del/Veh (s)	5.7

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	3.2	0.3	0.3
Total Delay (hr)	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	41.6	35.8	7.2	33.6	36.5	9.1	4.0	1.7	0.8	4.2	1.4	0.8

6: Main Street & Marshall Street Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.2
Total Delay (hr)	0.7
Total Del/Veh (s)	3.2

9: Main Street & Eau Claire Street Performance by movement

Movement	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.5	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	11.2	3.8	10.4	3.8	4.1	1.7	1.2	3.4	0.7	0.3	1.7

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.6
Total Delay (hr)	2.9
Total Del/Veh (s)	9.4

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	65	53	96	46	128	24	122
Average Queue (ft)	23	23	47	12	35	1	43
95th Queue (ft)	54	49	87	35	86	12	97
Link Distance (ft)	409		284		853		599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75		100		75	
Storage Blk Time (%)	0				0		2
Queuing Penalty (veh)	0				0		0

Intersection: 6: Main Street & Marshall Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	73	77	70	118	31	90
Average Queue (ft)	26	25	12	22	5	18
95th Queue (ft)	56	59	43	78	23	61
Link Distance (ft)	577	531		282		784
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)			0	0		0
Queuing Penalty (veh)			0	0		0

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	40	45	44	15	38
Average Queue (ft)	22	21	7	1	10
95th Queue (ft)	45	46	30	8	34
Link Distance (ft)	517	570		599	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			75		75
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Network Summary

Network wide Queuing Penalty: 1

3: Main Street & Messenger Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.4	3.9	0.2	0.1	0.2	3.3	0.6	0.7	0.3	0.0	0.0
Total Delay (hr)	0.2	0.0	0.2	0.6	0.1	0.1	0.1	0.7	0.0	0.0	0.7	0.0
Total Del/Veh (s)	28.5	26.9	7.4	30.8	28.7	13.4	8.0	4.9	3.2	10.4	4.9	3.5

3: Main Street & Messenger Street Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.7
Total Delay (hr)	2.8
Total Del/Veh (s)	7.2

6: Main Street & Marshall Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	3.4	0.3	0.2	0.2
Total Delay (hr)	0.0	0.0	0.1	0.2	0.0	0.1	0.3	0.0	0.0	0.3	0.0	1.1
Total Del/Veh (s)	31.1	30.6	6.5	37.9	9.4	5.6	2.4	1.9	4.6	2.4	1.8	3.8

9: Main Street & Eau Claire Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0
Total Del/Veh (s)	16.0	10.7	5.2	13.5	13.8	5.8	4.3	1.9	1.2	5.4	0.8	0.5

9: Main Street & Eau Claire Street Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.6
Total Del/Veh (s)	2.0

Total Network Performance

Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.8
Total Delay (hr)	5.0
Total Del/Veh (s)	12.2

Intersection: 3: Main Street & Messenger Street

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	73	76	141	86	203	37	203
Average Queue (ft)	24	37	59	25	73	3	77
95th Queue (ft)	60	63	108	64	156	20	155
Link Distance (ft)	409		284		853		599
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		75		100		75	
Storage Blk Time (%)	1	0		0	2		6
Queuing Penalty (veh)	1	0		0	2		0

Intersection: 6: Main Street & Marshall Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	76	63	108	175	30	104
Average Queue (ft)	36	23	25	38	2	34
95th Queue (ft)	62	54	65	119	14	92
Link Distance (ft)	577	531		282		784
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100		100	
Storage Blk Time (%)			0	1		1
Queuing Penalty (veh)			0	1		0

Intersection: 9: Main Street & Eau Claire Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	50	48	31	39
Average Queue (ft)	24	19	10	4
95th Queue (ft)	49	46	33	23
Link Distance (ft)	517	570		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			75	75
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 4