

APPENDIX E – BACKGROUND FUTURE TRAFFIC ANALYSIS

Lanes, Volumes, Timings

1: Clare Avenue

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	164	0	0	120
Future Volume (vph)	0	0	164	0	0	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		48			48
Link Distance (m)	139.9		634.5			378.6
Travel Time (s)	10.1		47.6			28.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	178	0	0	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	178	0	0	130
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	12.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	164	0	0	120
Future Vol, veh/h	0	0	164	0	0	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	178	0	0	130

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	309	178	0
Stage 1	178	-	-
Stage 2	130	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	688	870	-
Stage 1	857	-	-
Stage 2	901	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	688	870	-
Mov Cap-2 Maneuver	688	-	-
Stage 1	857	-	-
Stage 2	901	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1410
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

2: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	287	22	0	122	33	0	0	0	44	0	11
Future Volume (vph)	22	287	22	0	122	33	0	0	0	44	0	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1681	0	0	1654	0	0	1731	0	0	1620	0
Flt Permitted		0.997									0.962	
Satd. Flow (perm)	0	1681	0	0	1654	0	0	1731	0	0	1620	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		351.0			190.3			36.8			63.5	
Travel Time (s)		25.3			13.7			2.6			4.6	
Confl. Peds. (#/hr)	20		20									
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	312	24	0	133	36	0	0	0	48	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	0	169	0	0	0	0	0	60	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.8%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
2: Quaker Road

07-26-2024

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	22	287	22	0	122	33	0	0	0	44	0	11
Future Vol, veh/h	22	287	22	0	122	33	0	0	0	44	0	11
Conflicting Peds, #/hr	20	0	20	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	24	312	24	0	133	36	0	0	0	48	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	356	0	0	524	580	344	530	574	171
Stage 1	-	-	-	-	-	-	392	392	-	171	171	-
Stage 2	-	-	-	-	-	-	133	188	-	360	404	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1398	-	-	1214	-	-	467	428	703	463	432	878
Stage 1	-	-	-	-	-	-	637	610	-	836	761	-
Stage 2	-	-	-	-	-	-	876	748	-	663	603	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1374	-	-	1193	-	-	443	405	692	445	408	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	443	405	-	445	408	-
Stage 1	-	-	-	-	-	-	613	587	-	822	748	-
Stage 2	-	-	-	-	-	-	864	735	-	648	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.51		0	0	13.31
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	118	-	-	1193	-	-	493
HCM Lane V/C Ratio	-	0.017	-	-	-	-	-	0.121
HCM Control Delay (s/veh)	0	7.7	0	-	0	-	-	13.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.4

Lanes, Volumes, Timings

3: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	329	0	0	159	22	0	0	0	1	0	1
Future Volume (vph)	1	329	0	0	159	22	0	0	0	1	0	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1673	0	0	1731	0	0	1574	0
Flt Permitted											0.976	
Satd. Flow (perm)	0	1697	0	0	1673	0	0	1731	0	0	1574	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		190.3			295.7			54.2			58.9	
Travel Time (s)		13.7			21.3			3.9			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	358	0	0	173	24	0	0	0	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	359	0	0	197	0	0	0	0	0	2	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	29.7%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
3: Quaker Road

07-26-2024

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	329	0	0	159	22	0	0	0	1	0	1
Future Vol, veh/h	1	329	0	0	159	22	0	0	0	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	1	358	0	0	173	24	0	0	0	1	0	1

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	197	0	0	358	0	0	533	557	358	545	545	185
Stage 1	-	-	-	-	-	-	360	360	-	185	185	-
Stage 2	-	-	-	-	-	-	173	197	-	360	360	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1388	-	-	1212	-	-	461	442	691	453	449	863
Stage 1	-	-	-	-	-	-	663	630	-	822	751	-
Stage 2	-	-	-	-	-	-	834	742	-	663	630	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1388	-	-	1212	-	-	460	441	691	452	448	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	441	-	452	448	-
Stage 1	-	-	-	-	-	-	662	630	-	822	751	-
Stage 2	-	-	-	-	-	-	833	742	-	662	630	-

Approach	EB		WB		NB		SB
HCM Control Delay, s/v 0.02			0		0		11.09
HCM LOS					A		B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	5	-	-	1212	-	-	593
HCM Lane V/C Ratio	-	0.001	-	-	-	-	-	0.004
HCM Control Delay (s/veh)	0	7.6	0	-	0	-	-	11.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lanes, Volumes, Timings

4: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	0	0	0	0	379	0	0	401	22
Future Volume (vph)	22	0	22	0	0	0	0	379	0	0	401	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Flt Permitted		0.976										
Satd. Flow (perm)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		51.9			61.8			46.9			105.7	
Travel Time (s)		0.0			4.4			4.2			7.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	0	0	0	0	412	0	0	436	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	0	0	0	412	0	0	460	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.4%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	0	22	0	0	0	0	379	0	0	401	22
Future Vol, veh/h	22	0	22	0	0	0	0	379	0	0	401	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	0	0	0	0	412	0	0	436	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	860	860	448	848	872	412	460	0	0	412	0	0
Stage 1	448	448	-	412	412	-	-	-	-	-	-	-
Stage 2	412	412	-	436	460	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	276	294	611	284	289	644	1101	-	-	1158	-	-
Stage 1	590	573	-	621	594	-	-	-	-	-	-	-
Stage 2	617	594	-	603	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	276	294	611	273	289	644	1101	-	-	1158	-	-
Mov Cap-2 Maneuver	276	294	-	273	289	-	-	-	-	-	-	-
Stage 1	590	573	-	621	594	-	-	-	-	-	-	-
Stage 2	617	594	-	579	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v15.82		0	0	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	380	-	1158	-
HCM Lane V/C Ratio	-	-	-	0.126	-	-	-
HCM Control Delay (s/veh)	0	-	-	15.8	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Lanes, Volumes, Timings

5: Rice Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	379	0	0	423
Future Volume (vph)	0	0	379	0	0	423
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.3	3.3	3.3	3.3
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1692	0	0	1692
Flt Permitted						
Satd. Flow (perm)	1731	0	1692	0	0	1692
Link Speed (k/h)	50		40			50
Link Distance (m)	47.0		212.0			46.9
Travel Time (s)	3.4		19.1			3.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	412	0	0	460
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	412	0	0	460
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	379	0	0	423
Future Vol, veh/h	0	0	379	0	0	423
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	412	0	0	460
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	872	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	324	644	-	-	1158	-
Stage 1	673	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	324	644	-	-	1158	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1158	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings

6: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	0	0	0	0	358	0	0	401	22
Future Volume (vph)	22	0	22	0	0	0	0	358	0	0	401	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Flt Permitted		0.976										
Satd. Flow (perm)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		41.8			98.9			148.6			212.0	
Travel Time (s)		0.0			7.1			13.4			15.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	0	0	0	0	389	0	0	436	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	0	0	0	389	0	0	460	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.4%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	0	22	0	0	0	0	358	0	0	401	22
Future Vol, veh/h	22	0	22	0	0	0	0	358	0	0	401	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	0	0	0	0	389	0	0	436	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	837	837	448	825	849	389	460	0	0	389	0	0
Stage 1	448	448	-	389	389	-	-	-	-	-	-	-
Stage 2	389	389	-	436	460	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	286	303	611	294	298	664	1101	-	-	1180	-	-
Stage 1	590	573	-	639	608	-	-	-	-	-	-	-
Stage 2	635	608	-	603	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	286	303	611	282	298	664	1101	-	-	1180	-	-
Mov Cap-2 Maneuver	286	303	-	282	298	-	-	-	-	-	-	-
Stage 1	590	573	-	639	608	-	-	-	-	-	-	-
Stage 2	635	608	-	579	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v15.52		0	0	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1101	-	-	390	-	1180	-
HCM Lane V/C Ratio	-	-	-	0.123	-	-	-
HCM Control Delay (s/veh)	0	-	-	15.5	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Lanes, Volumes, Timings

7: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	382	0	0	362	0
Future Volume (vph)	0	0	0	0	0	0	0	382	0	0	362	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			75.8			232.4			190.6	
Travel Time (s)		4.7			0.0			16.7			13.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	415	0	0	393	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	415	0	0	393	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.2%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	382	0	0	362	0
Future Vol, veh/h	0	0	0	0	0	0	0	382	0	0	362	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	415	0	0	393	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	809	809	393	809	809	415	393	0	0	415	0	0
Stage 1	393	393	-	415	415	-	-	-	-	-	-	-
Stage 2	415	415	-	393	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	299	314	655	299	314	637	1165	-	-	1144	-	-
Stage 1	631	606	-	615	592	-	-	-	-	-	-	-
Stage 2	615	592	-	631	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	299	314	655	299	314	637	1165	-	-	1144	-	-
Mov Cap-2 Maneuver	299	314	-	299	314	-	-	-	-	-	-	-
Stage 1	631	606	-	615	592	-	-	-	-	-	-	-
Stage 2	615	592	-	631	606	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	0		0		0		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1165	-	-	-	-	1144	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s/veh)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-				

Lanes, Volumes, Timings

8: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	382	0	0	362	0
Future Volume (vph)	0	0	0	0	0	0	0	382	0	0	362	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		58.4			68.4			190.6			68.0	
Travel Time (s)		4.2			0.0			13.7			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	415	0	0	393	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	415	0	0	393	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.2%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	382	0	0	362	0
Future Vol, veh/h	0	0	0	0	0	0	0	382	0	0	362	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	415	0	0	393	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	809	809	393	809	809	415	393	0	0	415	0	0
Stage 1	393	393	-	415	415	-	-	-	-	-	-	-
Stage 2	415	415	-	393	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	299	314	655	299	314	637	1165	-	-	1144	-	-
Stage 1	631	606	-	615	592	-	-	-	-	-	-	-
Stage 2	615	592	-	631	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	299	314	655	299	314	637	1165	-	-	1144	-	-
Mov Cap-2 Maneuver	299	314	-	299	314	-	-	-	-	-	-	-
Stage 1	631	606	-	615	592	-	-	-	-	-	-	-
Stage 2	615	592	-	631	606	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	0		0		0		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1165	-	-	-	-	1144	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s/veh)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-				

Lanes, Volumes, Timings

9: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	279	0	0	174	0	0	0	0	0	0	0
Future Volume (vph)	0	279	0	0	174	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.7		45.7	45.7		45.7	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1731	0	0	1731	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1731	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		326.4			220.0			48.8			221.2	
Travel Time (s)		23.5			35.5			0.0			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	303	0	0	189	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	303	0	0	189	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	19.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	279	0	0	174	0	0	0	0	0	0	0
Future Vol, veh/h	0	279	0	0	174	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	303	0	0	189	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	189	0	0	303	0	0	492	492	303	492	492	189
Stage 1	-	-	-	-	-	-	303	303	-	189	189	-
Stage 2	-	-	-	-	-	-	189	189	-	303	303	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1397	-	-	1269	-	-	490	480	741	490	480	858
Stage 1	-	-	-	-	-	-	710	667	-	817	747	-
Stage 2	-	-	-	-	-	-	817	747	-	710	667	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1397	-	-	1269	-	-	490	480	741	490	480	858
Mov Cap-2 Maneuver	-	-	-	-	-	-	490	480	-	490	480	-
Stage 1	-	-	-	-	-	-	710	667	-	817	747	-
Stage 2	-	-	-	-	-	-	817	747	-	710	667	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1397	-	-	1269	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lanes, Volumes, Timings
10: Quaker Road

07-26-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	279	0	0	222	0	0
Future Volume (vph)	279	0	0	222	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1697	0	0	1731	1697	0
Flt Permitted						
Satd. Flow (perm)	1697	0	0	1731	1697	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	220.0			144.9	102.8	
Travel Time (s)	15.8			19.7	7.4	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	303	0	0	241	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	0	0	241	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
10: Quaker Road

07-26-2024

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	279	0	0	222	0	0
Future Vol, veh/h	279	0	0	222	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	0	2	0
Mvmt Flow	303	0	0	241	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	303
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1258
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1258
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1258	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings

11: First Avenue

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	22	0	22	0	253	0	22	300	22
Future Volume (vph)	22	0	22	22	0	22	0	253	0	22	300	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1559	0	0	1574	0	0	1731	0	0	1710	0
Flt Permitted		0.976			0.976						0.997	
Satd. Flow (perm)	0	1559	0	0	1574	0	0	1731	0	0	1710	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		91.1			108.9			108.6			221.2	
Travel Time (s)		6.6			7.8			7.8			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	24	0	24	0	275	0	24	326	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	48	0	0	275	0	0	374	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	0	22	22	0	22	0	253	0	22	300	22
Future Vol, veh/h	22	0	22	22	0	22	0	253	0	22	300	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	0	24	24	0	24	0	275	0	24	326	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	661	661	338	649	673	275	350	0	0	275	0	0
Stage 1	386	386	-	275	275	-	-	-	-	-	-	-
Stage 2	275	275	-	374	398	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	379	385	704	386	379	769	1220	-	-	1300	-	-
Stage 1	642	614	-	736	686	-	-	-	-	-	-	-
Stage 2	736	686	-	651	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	358	376	704	364	371	769	1220	-	-	1300	-	-
Mov Cap-2 Maneuver	358	376	-	364	371	-	-	-	-	-	-	-
Stage 1	627	600	-	736	686	-	-	-	-	-	-	-
Stage 2	713	686	-	615	592	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.42		13.07	0	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1220	-	-	475 494	114	-	-
HCM Lane V/C Ratio	-	-	-	0.101 0.097	0.018	-	-
HCM Control Delay (s/veh)	0	-	-	13.4 13.1	7.8	0	-
HCM Lane LOS	A	-	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.3	0.1	-	-

Lanes, Volumes, Timings
12: Cataract Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	156	0	0	175
Future Volume (vph)	0	0	156	0	0	175
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	65.2		119.8			70.9
Travel Time (s)	4.7		8.6			5.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	170	0	0	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	170	0	0	190
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	156	0	0	175
Future Vol, veh/h	0	0	156	0	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	2	0
Mvmt Flow	0	0	170	0	0	190

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	360	170	0
Stage 1	170	-	-
Stage 2	190	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	643	880	-
Stage 1	865	-	-
Stage 2	847	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	643	880	-
Mov Cap-2 Maneuver	643	-	-
Stage 1	865	-	-
Stage 2	847	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1408
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

13: Cataract Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	156	0	0	175
Future Volume (vph)	0	0	156	0	0	175
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	51.9		70.9			111.7
Travel Time (s)	3.7		5.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	170	0	0	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	170	0	0	190
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	156	0	0	175
Future Vol, veh/h	0	0	156	0	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	170	0	0	190

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	360	170	0
Stage 1	170	-	-
Stage 2	190	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	643	880	-
Stage 1	865	-	-
Stage 2	847	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	643	880	-
Mov Cap-2 Maneuver	643	-	-
Stage 1	865	-	-
Stage 2	847	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1420
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings
14: Cataract Road & Street 'D'

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	156	0	0	175
Future Volume (vph)	0	0	156	0	0	175
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	45.7	45.7		45.7	45.7	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	48		50			50
Link Distance (m)	162.3		111.7			177.0
Travel Time (s)	41.4		26.6			10.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	170	0	0	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	170	0	0	190
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
14: Cataract Road & Street 'D'

07-26-2024

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	156	0	0	175
Future Vol, veh/h	0	0	156	0	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	170	0	0	190
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	360	170	0	0	170	0
Stage 1	170	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	643	880	-	-	1420	-
Stage 1	865	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	643	880	-	-	1420	-
Mov Cap-2 Maneuver	643	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1420	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings

15: First Avenue

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	156	0	0	175	0
Future Volume (vph)	0	0	0	0	0	0	0	156	0	0	175	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1731	0	0	1731	0	0	1731	0	0	1731	0
Flt Permitted												
Satd. Flow (perm)	0	1731	0	0	1731	0	0	1731	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.4			80.3			177.0			680.8	
Travel Time (s)		9.7			0.0			12.7			39.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	170	0	0	190	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	170	0	0	190	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	13.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	156	0	0	175	0
Future Vol, veh/h	0	0	0	0	0	0	0	156	0	0	175	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	170	0	0	190	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	360	360	190	360	360	170	190	0	-	170	0	0
Stage 1	190	190	-	170	170	-	-	-	-	-	-	-
Stage 2	170	170	-	190	190	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	600	570	857	600	570	880	1396	-	0	1420	-	-
Stage 1	816	747	-	837	762	-	-	-	0	-	-	-
Stage 2	837	762	-	816	747	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	600	570	857	600	570	880	1396	-	-	1420	-	-
Mov Cap-2 Maneuver	600	570	-	600	570	-	-	-	-	-	-	-
Stage 1	816	747	-	837	762	-	-	-	-	-	-	-
Stage 2	837	762	-	816	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1396	-	-	-	1420	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	0	0	-	-
HCM Lane LOS	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	-	-

Lanes, Volumes, Timings

16: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	311	44	22	317	0	22	0	22	0	0	0
Future Volume (vph)	0	311	44	22	317	0	22	0	22	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1668	0	0	1692	0	0	1543	0	0	1697	0
Flt Permitted					0.997			0.976				
Satd. Flow (perm)	0	1668	0	0	1692	0	0	1543	0	0	1697	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		262.7			188.6			62.3			81.3	
Travel Time (s)		18.9			13.6			0.0			5.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	338	48	24	345	0	24	0	24	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	386	0	0	369	0	0	48	0	0	0	0
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	47.7%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	311	44	22	317	0	22	0	22	0	0	0
Future Vol, veh/h	0	311	44	22	317	0	22	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	0	338	48	24	345	0	24	0	24	0	0	0

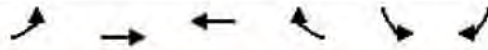
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	345	0	0	386	0	0	754	754	362	730	778	345
Stage 1	-	-	-	-	-	-	362	362	-	392	392	-
Stage 2	-	-	-	-	-	-	392	392	-	338	386	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1226	-	-	1173	-	-	325	338	683	340	327	703
Stage 1	-	-	-	-	-	-	657	625	-	636	606	-
Stage 2	-	-	-	-	-	-	632	606	-	681	610	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1226	-	-	1173	-	-	317	330	683	320	319	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	330	-	320	319	-
Stage 1	-	-	-	-	-	-	657	625	-	620	591	-
Stage 2	-	-	-	-	-	-	616	591	-	657	610	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.53	14.34	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	433	1226	-	-	117	-	-	-
HCM Lane V/C Ratio	0.11	-	-	-	0.02	-	-	-
HCM Control Delay (s/veh)	14.3	0	-	-	8.1	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-

Lanes, Volumes, Timings
17: Quaker Road

07-26-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	332	317	0	0	0
Future Volume (vph)	0	332	317	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1697	0	1697	0
Flt Permitted						
Satd. Flow (perm)	0	1697	1697	0	1697	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		76.8	297.6		65.7	
Travel Time (s)		5.5	21.4		4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	361	345	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	361	345	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	332	317	0	0	0
Future Vol, veh/h	0	332	317	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	0
Mvmt Flow	0	361	345	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	345	0	0 705 345
Stage 1	-	-	- 345 -
Stage 2	-	-	- 361 -
Critical Hdwy	4.1	-	- 6.42 6.2
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.2	-	- 3.518 3.3
Pot Cap-1 Maneuver	1226	-	- 403 703
Stage 1	-	-	- 717 -
Stage 2	-	-	- 705 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1226	-	- 403 703
Mov Cap-2 Maneuver	-	-	- 403 -
Stage 1	-	-	- 717 -
Stage 2	-	-	- 705 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1226	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	136	109	12	48	37	44	217	35	39	234	13
Future Volume (vph)	48	136	109	12	48	37	44	217	35	39	234	13
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	60.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1599	0	0	1585	0	1612	1656	0	1612	1683	0
Flt Permitted		0.936			0.939		0.592			0.585		
Satd. Flow (perm)	0	1508	0	0	1498	0	1004	1656	0	992	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			40			16			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		252.0			404.5			1006.2			780.9	
Travel Time (s)		18.1			29.1			72.4			56.2	
Confl. Peds. (#/hr)	4					4			1	1		
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	148	118	13	52	40	48	236	38	42	254	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	318	0	0	105	0	48	274	0	42	268	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.3	32.3		32.3	32.3		32.3	32.3		32.3	32.3	
Total Split (s)	32.3	32.3		32.3	32.3		32.7	32.7		32.7	32.7	
Total Split (%)	49.7%	49.7%		49.7%	49.7%		50.3%	50.3%		50.3%	50.3%	
Maximum Green (s)	26.0	26.0		26.0	26.0		26.4	26.4		26.4	26.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		-2.5			-2.5		-2.3	-2.3		-2.3	-2.3	
Total Lost Time (s)		3.8			3.8		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		4	4		1	1		0	0	
Act Effct Green (s)		15.7			15.7		15.9	15.9		15.9	15.9	
Actuated g/C Ratio		0.39			0.39		0.40	0.40		0.40	0.40	
v/c Ratio		0.51			0.17		0.12	0.41		0.11	0.40	
Control Delay (s/veh)		11.2			6.8		9.9	11.2		9.8	11.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		11.2			6.8		9.9	11.2		9.8	11.4	
LOS		B			A		A	B		A	B	
Approach Delay (s/veh)		11.2			6.8			11.0			11.2	
Approach LOS		B			A			B			B	
Queue Length 50th (m)		9.6			2.1		1.6	9.9		1.4	10.1	
Queue Length 95th (m)		38.7			12.1		8.7	35.4		7.9	35.6	
Internal Link Dist (m)		228.0			380.5			982.2			756.9	
Turn Bay Length (m)							60.0			60.0		
Base Capacity (vph)		1173			1161		777	1286		768	1304	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.27			0.09		0.06	0.21		0.05	0.21	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 40

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay (s/veh): 10.7

Intersection LOS: B

Intersection Capacity Utilization 57.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 18: Pelham St & Quaker Road



Lanes, Volumes, Timings
19: Rice Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	167	78	65	87	22	40	278	83	29	279	53
Future Volume (vph)	82	167	78	65	87	22	40	278	83	29	279	53
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1625	0	1644	1652	0	1607	1634	0	1607	1651	0
Flt Permitted	0.681			0.595			0.480			0.436		
Satd. Flow (perm)	1179	1625	0	1030	1652	0	812	1634	0	738	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			24			33			21	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		295.7			326.4			105.7			232.4	
Travel Time (s)		21.3			23.5			9.5			16.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	89	182	85	71	95	24	43	302	90	32	303	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	267	0	71	119	0	43	392	0	32	361	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		20.3	20.3		20.3	20.3	
Total Split (s)	26.4	26.4		26.4	26.4		23.6	23.6		23.6	23.6	
Total Split (%)	52.8%	52.8%		52.8%	52.8%		47.2%	47.2%		47.2%	47.2%	
Maximum Green (s)	20.1	20.1		20.1	20.1		17.3	17.3		17.3	17.3	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

19: Rice Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.41	0.41		0.41	0.41		0.33	0.33		0.33	0.33	
v/c Ratio	0.18	0.38		0.17	0.17		0.16	0.71		0.13	0.66	
Control Delay (s/veh)	10.7	9.9		10.7	8.6		13.3	21.6		13.0	19.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.7	9.9		10.7	8.6		13.3	21.6		13.0	19.7	
LOS	B	A		B	A		B	C		B	B	
Approach Delay (s/veh)		10.1			9.4			20.8			19.2	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	4.6	11.5		3.6	4.8		2.6	26.0		1.9	24.0	
Queue Length 95th (m)	12.1	26.2		10.3	12.8		8.1	#52.4		6.5	45.8	
Internal Link Dist (m)		271.7			302.4			81.7			208.4	
Turn Bay Length (m)	30.0			30.0			50.0			50.0		
Base Capacity (vph)	491	709		429	702		291	607		264	605	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.38		0.17	0.17		0.15	0.65		0.12	0.60	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 48.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay (s/veh): 16.0

Intersection LOS: B

Intersection Capacity Utilization 84.0%

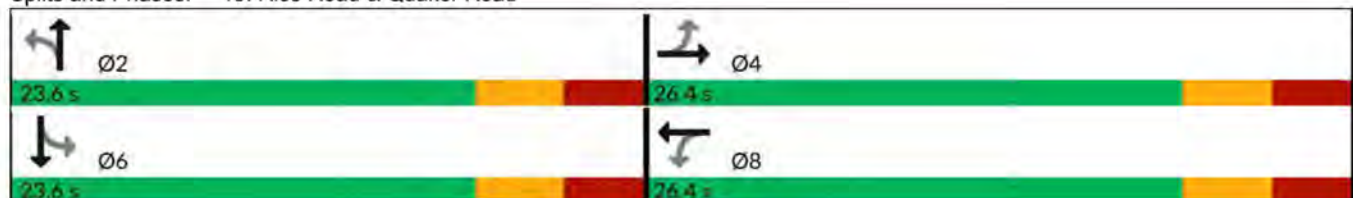
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 19: Rice Road & Quaker Road



Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	225	40	153	179	8	59	121	122	8	150	17
Future Volume (vph)	27	225	40	153	179	8	59	121	122	8	150	17
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1664	0	1644	1686	0	1644	1601	0	1644	1705	0
Flt Permitted	0.630			0.583			0.643			0.596		
Satd. Flow (perm)	1090	1664	0	1009	1686	0	1113	1601	0	1031	1705	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			5			111			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			262.7			221.2			119.8	
Travel Time (s)		9.2			18.9			15.9			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	245	43	166	195	9	64	132	133	9	163	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	288	0	166	204	0	64	265	0	9	181	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		24.3	24.3		24.3	24.3	
Total Split (s)	26.3	26.3		26.3	26.3		24.3	24.3		24.3	24.3	
Total Split (%)	52.0%	52.0%		52.0%	52.0%		48.0%	48.0%		48.0%	48.0%	
Maximum Green (s)	20.0	20.0		20.0	20.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	20.0	20.0		20.0	20.0		18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.36	0.36		0.36	0.36	
v/c Ratio	0.07	0.43		0.42	0.30		0.16	0.41		0.02	0.29	
Control Delay (s/veh)	10.1	12.8		15.1	11.8		12.5	9.5		11.0	12.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.1	12.8		15.1	11.8		12.5	9.5		11.0	12.6	
LOS	B	B		B	B		B	A		B	B	
Approach Delay (s/veh)		12.5			13.3			10.1			12.5	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	1.6	16.5		10.3	11.7		3.8	9.6		0.5	10.6	
Queue Length 95th (m)	5.4	32.3		23.4	23.6		10.3	23.8		2.7	22.1	
Internal Link Dist (m)		104.3			238.7			197.2			95.8	
Turn Bay Length (m)	30.0			30.0			40.0			30.0		
Base Capacity (vph)	430	670		398	669		395	641		366	614	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.43		0.42	0.30		0.16	0.41		0.02	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 50.6

Actuated Cycle Length: 50.6

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.43

Intersection Signal Delay (s/veh): 12.1

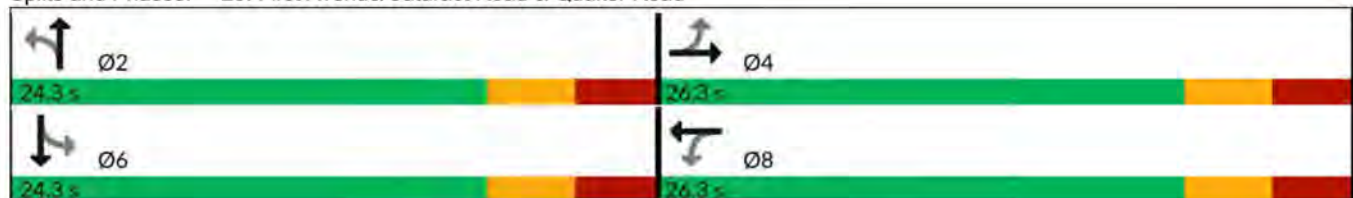
Intersection LOS: B

Intersection Capacity Utilization 77.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 20: First Avenue/Cataract Road & Quaker Road



Lanes, Volumes, Timings
21: Niagara St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	24	90	32	26	27	53	390	26	15	290	130
Future Volume (vph)	216	24	90	32	26	27	53	390	26	15	290	130
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		65.0	0.0		22.5	75.0		0.0	22.5		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1612	1480	0	1612	1557	0	1612	3195	0	1612	3053	0
Flt Permitted	0.661			0.675			0.458			0.398		
Satd. Flow (perm)	1121	1480	0	1144	1557	0	776	3195	0	675	3053	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101			33			9			93	
Link Speed (k/h)		50			50			50			60	
Link Distance (m)		297.6			214.3			467.2			109.3	
Travel Time (s)		21.4			15.4			33.6			6.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.82	0.82	0.82	0.78	0.78	0.78	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	243	27	101	39	32	33	68	500	33	16	312	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	128	0	39	65	0	68	533	0	16	452	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	11.1	37.7		37.7	37.7		31.7	31.7		31.7	31.7	
Total Split (s)	13.0	51.0		38.0	38.0		39.0	39.0		39.0	39.0	
Total Split (%)	14.4%	56.7%		42.2%	42.2%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	9.0	44.3		31.3	31.3		32.3	32.3		32.3	32.3	
Yellow Time (s)	3.0	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-2.9	-2.9		-2.9	-2.9		1.0	-2.6		1.0	-2.6	
Total Lost Time (s)	1.1	3.8		3.8	3.8		7.7	4.1		7.7	4.1	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings
21: Niagara St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0		24.0	24.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)		5		5	5		5	5		5	5	
Act Effect Green (s)	29.3	26.5		16.5	16.5		20.5	24.3		20.5	24.3	
Actuated g/C Ratio	0.50	0.45		0.28	0.28		0.35	0.41		0.35	0.41	
v/c Ratio	0.36	0.18		0.12	0.14		0.25	0.40		0.07	0.34	
Control Delay (s/veh)	9.8	3.7		17.4	10.5		20.6	15.4		18.2	12.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	9.8	3.7		17.4	10.5		20.6	15.4		18.2	12.2	
LOS	A	A		B	B		C	B		B	B	
Approach Delay (s/veh)		7.7			13.1			16.0			12.4	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	13.2	1.4		3.2	2.6		4.9	19.3		1.1	12.5	
Queue Length 95th (m)	26.9	8.3		8.6	8.8		16.2	40.3		6.4	34.6	
Internal Link Dist (m)		273.6			190.3			443.2			85.3	
Turn Bay Length (m)							75.0			22.5		
Base Capacity (vph)	668	1227		691	954		429	1974		373	1918	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.10		0.06	0.07		0.16	0.27		0.04	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 59

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.40

Intersection Signal Delay (s/veh): 12.7

Intersection LOS: B

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 21: Niagara St & Quaker Road



Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	32	3	304	41	57	4	314	405	29	189	3
Future Volume (vph)	10	32	3	304	41	57	4	314	405	29	189	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		60.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1615	0	1566	1505	0	0	1647	1401	0	3103	0
Flt Permitted		0.890		0.586				0.996			0.880	
Satd. Flow (perm)	0	1454	0	966	1505	0	0	1642	1401	0	2750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			66				422			2
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		834.8			202.8			911.9			164.9	
Travel Time (s)		60.1			12.2			54.7			9.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.79	0.79	0.79	0.86	0.86	0.86	0.96	0.96	0.96	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	41	4	353	48	66	4	327	422	38	245	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	353	114	0	0	331	422	0	287	0
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0	6.1	12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	16.7	16.7		16.7	16.7		26.7	26.7	26.7	26.7	26.7	
Total Split (s)	16.7	16.7		22.4	39.1		30.9	30.9	30.9	30.9	30.9	
Total Split (%)	23.9%	23.9%		32.0%	55.9%		44.1%	44.1%	44.1%	44.1%	44.1%	
Maximum Green (s)	10.0	10.0		18.4	32.4		24.2	24.2	24.2	24.2	24.2	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0		1.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		-2.1		1.0	-2.1			-2.4	-2.4		-2.4	
Total Lost Time (s)		4.6		5.0	4.6			4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	

Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		12.7		23.2	23.7			25.3	25.3		25.3	
Actuated g/C Ratio		0.22		0.40	0.41			0.43	0.43		0.43	
v/c Ratio		0.18		0.66	0.18			0.46	0.50		0.24	
Control Delay (s/veh)		24.1		19.2	5.6			17.3	4.2		13.5	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		24.1		19.2	5.6			17.3	4.2		13.5	
LOS		C		B	A			B	A		B	
Approach Delay (s/veh)		24.1			15.9			9.9			13.5	
Approach LOS		C			B			A			B	
Queue Length 50th (m)		5.5		26.6	2.9			30.0	0.0		12.1	
Queue Length 95th (m)		13.4		45.7	9.6			55.4	15.9		18.0	
Internal Link Dist (m)		810.8			178.8			887.9			140.9	
Turn Bay Length (m)												
Base Capacity (vph)		320		623	961			787	891		1320	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.18		0.57	0.12			0.42	0.47		0.22	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 58.3

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay (s/veh): 12.9

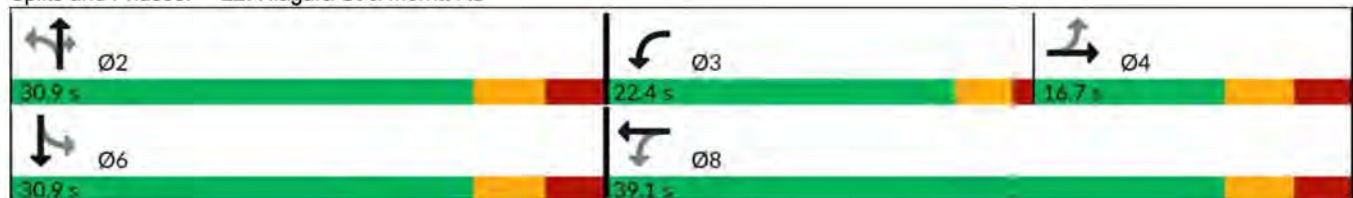
Intersection LOS: B

Intersection Capacity Utilization 63.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 22: Niagara St & Merritt Rd



Lanes, Volumes, Timings

23: Clare Avenue/Line Avenue & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	167	22	44	78	11	11	44	109	55	55	11
Future Volume (vph)	22	167	22	44	78	11	11	44	109	55	55	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1665	0	0	1651	0	0	1572	0	0	1672	0
Flt Permitted		0.995			0.984			0.997			0.978	
Satd. Flow (perm)	0	1665	0	0	1651	0	0	1572	0	0	1672	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		404.5			351.0			378.6			1022.4	
Travel Time (s)		29.1			60.3			27.3			73.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	182	24	48	85	12	12	48	118	60	60	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	230	0	0	145	0	0	178	0	0	132	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.6%											
Analysis Period (min)	15											
	ICU Level of Service A											

HCM 7th AWSC
23: Clare Avenue/Line Avenue & Quaker Road

07-26-2024

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	167	22	44	78	11	11	44	109	55	55	11
Future Vol, veh/h	22	167	22	44	78	11	11	44	109	55	55	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
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	24	182	24	48	85	12	12	48	118	60	60	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

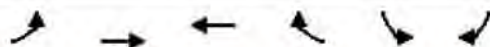
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10	9.3	9	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	10%	33%	45%
Vol Thru, %	27%	79%	59%	45%
Vol Right, %	66%	10%	8%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	211	133	121
LT Vol	11	22	44	55
Through Vol	44	167	78	55
RT Vol	109	22	11	11
Lane Flow Rate	178	229	145	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.307	0.2	0.185
Departure Headway (Hd)	4.597	4.814	4.978	5.065
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	741	714	702
Service Time	2.668	2.883	3.055	3.142
HCM Lane V/C Ratio	0.23	0.309	0.203	0.188
HCM Control Delay, s/veh	9	10	9.3	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	1.3	0.7	0.7

Lanes, Volumes, Timings

25: Quaker Road

07-26-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	305	311	0	0	0
Future Volume (vph)	0	305	311	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1697	0	1731	0
Flt Permitted						
Satd. Flow (perm)	0	1697	1697	0	1731	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		188.6	76.8		55.5	
Travel Time (s)		13.6	5.5		4.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	332	338	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	332	338	0	0	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
25: Quaker Road

07-26-2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	305	311	0	0	0
Future Vol, veh/h	0	305	311	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	332	338	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	338	0	-	0	670	338
Stage 1	-	-	-	-	338	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1232	-	-	-	426	709
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	732	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1232	-	-	-	426	709
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	732	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1232	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lanes, Volumes, Timings

99: Quaker Road

07-26-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶↷	
Traffic Volume (vph)	256	0	40	194	10	20
Future Volume (vph)	256	0	40	194	10	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1697	0	0	1683	1519	0
Flt Permitted				0.992	0.984	
Satd. Flow (perm)	1697	0	0	1683	1519	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.9			128.3	84.4	
Travel Time (s)	10.4			9.2	6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	278	0	43	211	11	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	278	0	0	254	33	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	256	0	40	194	10	20
Future Vol, veh/h	256	0	40	194	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	278	0	43	211	11	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	278
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1284
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1284
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.35	11.08
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	625	-	-	308	-
HCM Lane V/C Ratio	0.052	-	-	0.034	-
HCM Control Delay (s/veh)	11.1	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lanes, Volumes, Timings

1: Clare Avenue

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	164	0	0	158
Future Volume (vph)	0	0	164	0	0	158
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		48			48
Link Distance (m)	139.9		634.5			378.6
Travel Time (s)	10.1		47.6			28.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	178	0	0	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	178	0	0	172
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	12.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
1: Clare Avenue

07-26-2024

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	164	0	0	158
Future Vol, veh/h	0	0	164	0	0	158
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	178	0	0	172

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	350	178	0
Stage 1	178	-	-
Stage 2	172	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	651	870	-
Stage 1	857	-	-
Stage 2	863	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	651	870	-
Mov Cap-2 Maneuver	651	-	-
Stage 1	857	-	-
Stage 2	863	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1410	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Lanes, Volumes, Timings

2: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	336	0	5	355	22	0	0	0	44	0	11
Future Volume (vph)	22	336	0	5	355	22	0	0	0	44	0	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1694	0	0	1684	0	0	1731	0	0	1620	0
Flt Permitted		0.997			0.999						0.962	
Satd. Flow (perm)	0	1694	0	0	1684	0	0	1731	0	0	1620	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		351.0			190.3			36.8			63.5	
Travel Time (s)		25.3			13.7			2.6			4.6	
Confl. Peds. (#/hr)	20		20									
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	365	0	5	386	24	0	0	0	48	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	389	0	0	415	0	0	0	0	0	60	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.6%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
2: Quaker Road

07-26-2024

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	22	336	0	5	355	22	0	0	0	44	0	11
Future Vol, veh/h	22	336	0	5	355	22	0	0	0	44	0	11
Conflicting Peds, #/hr	20	0	20	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	24	365	0	5	386	24	0	0	0	48	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	385	0	0	830	874	385	842	862	418
Stage 1	-	-	-	-	-	-	433	433	-	429	429	-
Stage 2	-	-	-	-	-	-	397	441	-	413	433	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1140	-	-	1184	-	-	292	290	667	286	295	639
Stage 1	-	-	-	-	-	-	605	585	-	608	588	-
Stage 2	-	-	-	-	-	-	633	581	-	620	585	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1121	-	-	1164	-	-	272	271	656	272	276	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	271	-	272	276	-
Stage 1	-	-	-	-	-	-	579	560	-	594	574	-
Stage 2	-	-	-	-	-	-	617	567	-	604	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.51	0.11	0	19.53
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	111	-	-	23	-	-	307
HCM Lane V/C Ratio	-	0.021	-	-	0.005	-	-	0.195
HCM Control Delay (s/veh)	0	8.3	0	-	8.1	0	-	19.5
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.7

Lanes, Volumes, Timings

3: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	374	0	0	382	22	0	0	0	1	0	1
Future Volume (vph)	5	374	0	0	382	22	0	0	0	1	0	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1695	0	0	1687	0	0	1731	0	0	1574	0
Flt Permitted		0.999									0.976	
Satd. Flow (perm)	0	1695	0	0	1687	0	0	1731	0	0	1574	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		190.3			295.7			54.2			58.9	
Travel Time (s)		13.7			21.3			3.9			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	407	0	0	415	24	0	0	0	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	412	0	0	439	0	0	0	0	0	2	0
Sign Control	Free				Free				Stop		Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.7%				ICU Level of Service A							
Analysis Period (min)	15											

HCM 7th TWSC
3: Quaker Road

07-26-2024

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	374	0	0	382	22	0	0	0	1	0	1
Future Vol, veh/h	5	374	0	0	382	22	0	0	0	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	5	407	0	0	415	24	0	0	0	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	0	407	0	0	833	857	407	845	845	427
Stage 1	-	-	-	-	-	-	417	417	-	427	427	-
Stage 2	-	-	-	-	-	-	415	439	-	417	417	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1131	-	-	1163	-	-	290	297	649	285	302	632
Stage 1	-	-	-	-	-	-	617	594	-	609	589	-
Stage 2	-	-	-	-	-	-	619	581	-	617	594	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1131	-	-	1163	-	-	288	295	649	283	300	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	295	-	283	300	-
Stage 1	-	-	-	-	-	-	613	591	-	609	589	-
Stage 2	-	-	-	-	-	-	618	581	-	613	591	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.11		0	0	14.25
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	24	-	-	1163	-	-	391
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.006
HCM Control Delay (s/veh)	0	8.2	0	-	0	-	-	14.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Lanes, Volumes, Timings

4: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	0	0	0	0	407	0	0	428	22
Future Volume (vph)	22	0	22	0	0	0	0	407	0	0	428	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Flt Permitted		0.976										
Satd. Flow (perm)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		24.3			61.8			46.9			105.7	
Travel Time (s)		0.0			4.4			4.2			7.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	0	0	0	0	442	0	0	465	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	0	0	0	442	0	0	489	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.9%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	0	22	0	0	0	0	407	0	0	428	22
Future Vol, veh/h	22	0	22	0	0	0	0	407	0	0	428	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	0	0	0	0	442	0	0	465	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	920	920	477	908	932	442	489	0	0	442	0	0
Stage 1	477	477	-	442	442	-	-	-	-	-	-	-
Stage 2	442	442	-	465	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	252	271	588	258	267	619	1074	-	-	1128	-	-
Stage 1	569	556	-	598	576	-	-	-	-	-	-	-
Stage 2	594	576	-	581	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	252	271	588	248	267	619	1074	-	-	1128	-	-
Mov Cap-2 Maneuver	252	271	-	248	267	-	-	-	-	-	-	-
Stage 1	569	556	-	598	576	-	-	-	-	-	-	-
Stage 2	594	576	-	558	549	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v16.81		0	0	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	352	-	-	-
HCM Lane V/C Ratio	-	-	-	0.136	-	-	-
HCM Control Delay (s/veh)	0	-	-	16.8	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-

Lanes, Volumes, Timings

5: Rice Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	407	0	0	450
Future Volume (vph)	0	0	407	0	0	450
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.3	3.3	3.3	3.3
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1692	0	0	1692
Flt Permitted						
Satd. Flow (perm)	1731	0	1692	0	0	1692
Link Speed (k/h)	50		40			50
Link Distance (m)	47.0		212.0			46.9
Travel Time (s)	3.4		19.1			3.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	442	0	0	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	442	0	0	489
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	407	0	0	450
Future Vol, veh/h	0	0	407	0	0	450
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	442	0	0	489
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	932	442	0	0	442	0
Stage 1	442	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	298	619	-	-	1128	-
Stage 1	652	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	298	619	-	-	1128	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1128	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings

6: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	0	0	0	0	385	0	0	428	22
Future Volume (vph)	22	0	22	0	0	0	0	385	0	0	428	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Flt Permitted		0.976										
Satd. Flow (perm)	0	1543	0	0	1697	0	0	1692	0	0	1678	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		28.7			98.9			148.6			212.0	
Travel Time (s)		0.0			7.1			13.4			15.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	0	0	0	0	418	0	0	465	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	0	0	0	418	0	0	489	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.9%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	0	22	0	0	0	0	385	0	0	428	22
Future Vol, veh/h	22	0	22	0	0	0	0	385	0	0	428	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	0	0	0	0	418	0	0	465	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	896	896	477	884	908	418	489	0	0	418	0	0
Stage 1	477	477	-	418	418	-	-	-	-	-	-	-
Stage 2	418	418	-	465	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	261	280	588	268	275	639	1074	-	-	1151	-	-
Stage 1	569	556	-	616	590	-	-	-	-	-	-	-
Stage 2	612	590	-	581	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	261	280	588	257	275	639	1074	-	-	1151	-	-
Mov Cap-2 Maneuver	261	280	-	257	275	-	-	-	-	-	-	-
Stage 1	569	556	-	616	590	-	-	-	-	-	-	-
Stage 2	612	590	-	558	549	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v16.46		0	0	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	362	-	1151	-
HCM Lane V/C Ratio	-	-	-	0.132	-	-	-
HCM Control Delay (s/veh)	0	-	-	16.5	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-

Lanes, Volumes, Timings

7: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	402	0	0	396	0
Future Volume (vph)	0	0	0	0	0	0	0	402	0	0	396	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			63.8			232.4			190.6	
Travel Time (s)		4.7			0.0			16.7			13.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	437	0	0	430	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	437	0	0	430	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	402	0	0	396	0
Future Vol, veh/h	0	0	0	0	0	0	0	402	0	0	396	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	437	0	0	430	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	867	867	430	867	867	437	430	0	0	437	0	0
Stage 1	430	430	-	437	437	-	-	-	-	-	-	-
Stage 2	437	437	-	430	430	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	273	291	625	273	291	620	1129	-	-	1123	-	-
Stage 1	603	583	-	598	579	-	-	-	-	-	-	-
Stage 2	598	579	-	603	583	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	273	291	625	273	291	620	1129	-	-	1123	-	-
Mov Cap-2 Maneuver	273	291	-	273	291	-	-	-	-	-	-	-
Stage 1	603	583	-	598	579	-	-	-	-	-	-	-
Stage 2	598	579	-	603	583	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	0		0		0		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1129	-	-	-	-	1123	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s/veh)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-				

Lanes, Volumes, Timings

8: Rice Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	402	0	0	396	0
Future Volume (vph)	0	0	0	0	0	0	0	402	0	0	396	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1658	0	0	1658	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		58.4			76.2			190.6			68.0	
Travel Time (s)		4.2			0.0			13.7			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	437	0	0	430	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	437	0	0	430	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	26.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	402	0	0	396	0
Future Vol, veh/h	0	0	0	0	0	0	0	402	0	0	396	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	437	0	0	430	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	867	867	430	867	867	437	430	0	0	437	0	0
Stage 1	430	430	-	437	437	-	-	-	-	-	-	-
Stage 2	437	437	-	430	430	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	273	291	625	273	291	620	1129	-	-	1123	-	-
Stage 1	603	583	-	598	579	-	-	-	-	-	-	-
Stage 2	598	579	-	603	583	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	273	291	625	273	291	620	1129	-	-	1123	-	-
Mov Cap-2 Maneuver	273	291	-	273	291	-	-	-	-	-	-	-
Stage 1	603	583	-	598	579	-	-	-	-	-	-	-
Stage 2	598	579	-	603	583	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	0		0		0		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1129	-	-	-	-	1123	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s/veh)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-				

Lanes, Volumes, Timings

9: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	314	0	0	356	0	0	0	0	0	0	0
Future Volume (vph)	0	314	0	0	356	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.7		45.7	45.7		45.7	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1697	0	0	1697	0	0	1731	0	0	1731	0
Flt Permitted												
Satd. Flow (perm)	0	1697	0	0	1697	0	0	1731	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		326.4			220.0			48.8			221.2	
Travel Time (s)		23.5			35.5			0.0			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	341	0	0	387	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	387	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	23.7%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	314	0	0	356	0	0	0	0	0	0	0
Future Vol, veh/h	0	314	0	0	356	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	341	0	0	387	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	387	0	0	341	0	0	728	728	341	728	728	387
Stage 1	-	-	-	-	-	-	341	341	-	387	387	-
Stage 2	-	-	-	-	-	-	387	387	-	341	341	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1183	-	-	1229	-	-	341	352	706	341	352	665
Stage 1	-	-	-	-	-	-	678	642	-	641	613	-
Stage 2	-	-	-	-	-	-	641	613	-	678	642	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1183	-	-	1229	-	-	341	352	706	341	352	665
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	352	-	341	352	-
Stage 1	-	-	-	-	-	-	678	642	-	641	613	-
Stage 2	-	-	-	-	-	-	641	613	-	678	642	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1183	-	-	1229	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lanes, Volumes, Timings
10: Quaker Road

07-26-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	314	0	0	356	0	0
Future Volume (vph)	314	0	0	356	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1697	0	0	1731	1697	0
Flt Permitted						
Satd. Flow (perm)	1697	0	0	1731	1697	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	220.0			142.9	102.8	
Travel Time (s)	15.8			19.7	7.4	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	341	0	0	387	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	341	0	0	387	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	314	0	0	356	0	0
Future Vol, veh/h	314	0	0	356	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	0	2	0
Mvmt Flow	341	0	0	387	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	341
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1218	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1218	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1218	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings

11: First Avenue

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	22	0	22	0	308	0	22	295	22
Future Volume (vph)	22	0	22	22	0	22	0	308	0	22	295	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1559	0	0	1574	0	0	1731	0	0	1710	0
Flt Permitted		0.976			0.976						0.997	
Satd. Flow (perm)	0	1559	0	0	1574	0	0	1731	0	0	1710	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		91.1			108.9			108.6			221.2	
Travel Time (s)		6.6			7.8			7.8			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	24	0	24	0	335	0	24	321	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	48	0	0	335	0	0	369	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	48.3%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	0	22	22	0	22	0	308	0	22	295	22
Future Vol, veh/h	22	0	22	22	0	22	0	308	0	22	295	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	0	24	24	0	24	0	335	0	24	321	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	715	715	333	703	727	335	345	0	0	335	0	0
Stage 1	380	380	-	335	335	-	-	-	-	-	-	-
Stage 2	335	335	-	368	392	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	348	359	709	355	353	712	1226	-	-	1236	-	-
Stage 1	646	617	-	683	646	-	-	-	-	-	-	-
Stage 2	683	646	-	655	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	328	350	709	335	344	712	1226	-	-	1236	-	-
Mov Cap-2 Maneuver	328	350	-	335	344	-	-	-	-	-	-	-
Stage 1	630	602	-	683	646	-	-	-	-	-	-	-
Stage 2	660	646	-	618	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.97		13.84	0	0.52
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1226	-	-	449 455	115	-	-
HCM Lane V/C Ratio	-	-	-	0.107 0.105	0.019	-	-
HCM Control Delay (s/veh)	0	-	-	14 13.8	8	0	-
HCM Lane LOS	A	-	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4 0.3	0.1	-	-

Lanes, Volumes, Timings
12: Cataract Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	187	0	0	192
Future Volume (vph)	0	0	187	0	0	192
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	65.2		119.8			70.9
Travel Time (s)	4.7		8.6			5.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	203	0	0	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	203	0	0	209
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	187	0	0	192
Future Vol, veh/h	0	0	187	0	0	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	2	0
Mvmt Flow	0	0	203	0	0	209

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	412	203	0
Stage 1	203	-	-
Stage 2	209	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	600	843	-
Stage 1	836	-	-
Stage 2	831	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	600	843	-
Mov Cap-2 Maneuver	600	-	-
Stage 1	836	-	-
Stage 2	831	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1368
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings
13: Cataract Road

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	187	0	0	192
Future Volume (vph)	0	0	187	0	0	192
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	51.9		70.9			111.7
Travel Time (s)	3.7		5.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	203	0	0	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	203	0	0	209
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	187	0	0	192
Future Vol, veh/h	0	0	187	0	0	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	203	0	0	209

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	412	203	0
Stage 1	203	-	-
Stage 2	209	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	600	843	-
Stage 1	836	-	-
Stage 2	831	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	600	843	-
Mov Cap-2 Maneuver	600	-	-
Stage 1	836	-	-
Stage 2	831	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1381
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings
14: Cataract Road & Street 'D'

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	187	0	0	192
Future Volume (vph)	0	0	187	0	0	192
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	45.7	45.7		45.7	45.7	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1731	0	0	1731
Flt Permitted						
Satd. Flow (perm)	1731	0	1731	0	0	1731
Link Speed (k/h)	48		50			50
Link Distance (m)	162.3		111.7			177.0
Travel Time (s)	41.4		26.6			10.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	203	0	0	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	203	0	0	209
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
14: Cataract Road & Street 'D'

07-26-2024

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	187	0	0	192
Future Vol, veh/h	0	0	187	0	0	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	203	0	0	209

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	412	203	0
Stage 1	203	-	-
Stage 2	209	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	600	843	-
Stage 1	836	-	-
Stage 2	831	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	600	843	-
Mov Cap-2 Maneuver	600	-	-
Stage 1	836	-	-
Stage 2	831	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1381
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Lanes, Volumes, Timings

15: First Avenue

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	187	0	0	192	0
Future Volume (vph)	0	0	0	0	0	0	0	187	0	0	192	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1731	0	0	1731	0	0	1731	0	0	1731	0
Flt Permitted												
Satd. Flow (perm)	0	1731	0	0	1731	0	0	1731	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.4			80.3			177.0			566.2	
Travel Time (s)		9.7			0.0			12.7			39.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	203	0	0	209	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	203	0	0	209	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	14.3%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	187	0	0	192	0
Future Vol, veh/h	0	0	0	0	0	0	0	187	0	0	192	0
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	0	0	0	0	0	0	203	0	0	209	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	412	412	209	412	412	203	209	0	0	203	0	0
Stage 1	209	209	-	203	203	-	-	-	-	-	-	-
Stage 2	203	203	-	209	209	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	554	533	837	554	533	843	1374	-	-	1381	-	-
Stage 1	798	733	-	803	737	-	-	-	-	-	-	-
Stage 2	803	737	-	798	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	554	533	837	554	533	843	1374	-	-	1381	-	-
Mov Cap-2 Maneuver	554	533	-	554	533	-	-	-	-	-	-	-
Stage 1	798	733	-	803	737	-	-	-	-	-	-	-
Stage 2	803	737	-	798	733	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1374	-	-	-	1381	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	0	-	-
HCM Lane LOS	A	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	-	-

Lanes, Volumes, Timings

16: Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	436	22	22	441	0	22	0	22	0	0	0
Future Volume (vph)	0	436	22	22	441	0	22	0	22	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1685	0	0	1693	0	0	1543	0	0	1697	0
Flt Permitted					0.998			0.976				
Satd. Flow (perm)	0	1685	0	0	1693	0	0	1543	0	0	1697	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		262.7			188.6			49.2			81.3	
Travel Time (s)		18.9			13.6			0.0			5.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	474	24	24	479	0	24	0	24	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	503	0	0	48	0	0	0	0
Sign Control	Free				Free				Stop			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.7%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	436	22	22	441	0	22	0	22	0	0	0
Future Vol, veh/h	0	436	22	22	441	0	22	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	0	474	24	24	479	0	24	0	24	0	0	0

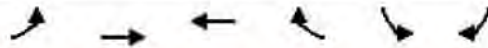
Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	479	0	0	498	0	0	1013	1013	486	1001	1025	479
Stage 1	-	-	-	-	-	-	486	486	-	527	527	-
Stage 2	-	-	-	-	-	-	527	527	-	474	498	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1094	-	-	1066	-	-	217	239	581	223	235	590
Stage 1	-	-	-	-	-	-	563	551	-	538	528	-
Stage 2	-	-	-	-	-	-	534	528	-	575	544	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1094	-	-	1066	-	-	211	232	581	208	228	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	232	-	208	228	-
Stage 1	-	-	-	-	-	-	563	551	-	522	512	-
Stage 2	-	-	-	-	-	-	518	512	-	551	544	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0.4	18.75	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	309	1094	-	-	86	-	-	-
HCM Lane V/C Ratio	0.155	-	-	-	0.022	-	-	-
HCM Control Delay (s/veh)	18.8	0	-	-	8.5	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	-

Lanes, Volumes, Timings
17: Quaker Road

07-26-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Volume (vph)	0	458	463	0	0	0
Future Volume (vph)	0	458	463	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1697	0	1697	0
Flt Permitted						
Satd. Flow (perm)	0	1697	1697	0	1697	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		76.8	297.6		65.7	
Travel Time (s)		5.5	21.4		4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	498	503	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	498	503	0	0	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	458	463	0	0	0
Future Vol, veh/h	0	458	463	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	0
Mvmt Flow	0	498	503	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	503	0	0 1001 503
Stage 1	-	-	- 503 -
Stage 2	-	-	- 498 -
Critical Hdwy	4.1	-	- 6.42 6.2
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.2	-	- 3.518 3.3
Pot Cap-1 Maneuver	1072	-	- 269 572
Stage 1	-	-	- 607 -
Stage 2	-	-	- 611 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1072	-	- 269 572
Mov Cap-2 Maneuver	-	-	- 269 -
Stage 1	-	-	- 607 -
Stage 2	-	-	- 611 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1072	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	136	118	45	157	82	117	295	40	71	353	68
Future Volume (vph)	23	136	118	45	157	82	117	295	40	71	353	68
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	60.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1594	0	0	1606	0	1612	1662	0	1612	1656	0
Flt Permitted		0.954			0.909		0.384			0.481		
Satd. Flow (perm)	0	1526	0	0	1471	0	652	1662	0	816	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			40			13			19	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		252.0			404.5			1006.2			780.9	
Travel Time (s)		18.1			29.1			72.4			56.2	
Confl. Peds. (#/hr)	4					4			1	1		
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	148	128	49	171	89	127	321	43	77	384	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	309	0	127	364	0	77	458	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.3	32.3		32.3	32.3		32.3	32.3		32.3	32.3	
Total Split (s)	32.3	32.3		32.3	32.3		32.7	32.7		32.7	32.7	
Total Split (%)	49.7%	49.7%		49.7%	49.7%		50.3%	50.3%		50.3%	50.3%	
Maximum Green (s)	26.0	26.0		26.0	26.0		26.4	26.4		26.4	26.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		-2.5			-2.5		-2.3	-2.3		-2.3	-2.3	
Total Lost Time (s)		3.8			3.8		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		4	4		1	1		0	0	
Act Effct Green (s)		16.9			16.9		19.1	19.1		19.1	19.1	
Actuated g/C Ratio		0.38			0.38		0.43	0.43		0.43	0.43	
v/c Ratio		0.48			0.53		0.45	0.50		0.22	0.63	
Control Delay (s/veh)		11.3			13.6		16.8	12.6		11.3	15.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		11.3			13.6		16.8	12.6		11.3	15.1	
LOS		B			B		B	B		B	B	
Approach Delay (s/veh)		11.3			13.6			13.7			14.5	
Approach LOS		B			B			B			B	
Queue Length 50th (m)		11.3			13.8		5.8	16.3		3.1	21.9	
Queue Length 95th (m)		34.6			40.2		24.2	49.4		13.3	65.8	
Internal Link Dist (m)		228.0			380.5			982.2			756.9	
Turn Bay Length (m)							60.0			60.0		
Base Capacity (vph)		1073			1025		451	1156		565	1153	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.28			0.30		0.28	0.31		0.14	0.40	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 44.4

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay (s/veh): 13.5

Intersection LOS: B

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 18: Pelham St & Quaker Road



Lanes, Volumes, Timings
19: Rice Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	220	58	77	249	36	94	265	70	24	315	61
Future Volume (vph)	101	220	58	77	249	36	94	265	70	24	315	61
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1651	0	1644	1669	0	1607	1639	0	1607	1651	0
Flt Permitted	0.544			0.555			0.446			0.496		
Satd. Flow (perm)	941	1651	0	960	1669	0	754	1639	0	839	1651	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			15			29			21	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		295.7			326.4			105.7			232.4	
Travel Time (s)		21.3			23.5			9.5			16.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	110	239	63	84	271	39	102	288	76	26	342	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	302	0	84	310	0	102	364	0	26	408	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		20.3	20.3		20.3	20.3	
Total Split (s)	26.4	26.4		26.4	26.4		28.6	28.6		28.6	28.6	
Total Split (%)	48.0%	48.0%		48.0%	48.0%		52.0%	52.0%		52.0%	52.0%	
Maximum Green (s)	20.1	20.1		20.1	20.1		22.3	22.3		22.3	22.3	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

19: Rice Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	20.0	20.0		20.0	20.0		22.3	22.3		22.3	22.3	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.41	0.41		0.41	0.41	
v/c Ratio	0.32	0.49		0.24	0.50		0.33	0.53		0.08	0.60	
Control Delay (s/veh)	15.9	15.5		14.5	16.3		15.1	14.9		10.8	16.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	15.9	15.5		14.5	16.3		15.1	14.9		10.8	16.6	
LOS	B	B		B	B		B	B		B	B	
Approach Delay (s/veh)		15.6			15.9			14.9			16.2	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	7.6	20.2		5.6	21.9		6.6	23.7		1.5	28.6	
Queue Length 95th (m)	18.0	38.5		14.0	40.8		16.6	44.5		5.3	52.2	
Internal Link Dist (m)		271.7			302.4			81.7			208.4	
Turn Bay Length (m)	30.0			30.0			50.0			50.0		
Base Capacity (vph)	344	621		351	620		306	682		340	683	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.32	0.49		0.24	0.50		0.33	0.53		0.08	0.60	

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 54.9

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay (s/veh): 15.6

Intersection LOS: B

Intersection Capacity Utilization 84.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 19: Rice Road & Quaker Road



Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	267	38	140	307	16	32	143	178	13	161	17
Future Volume (vph)	28	267	38	140	307	16	32	143	178	13	161	17
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		40.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1668	0	1644	1686	0	1644	1587	0	1644	1706	0
Flt Permitted	0.518			0.542			0.636			0.506		
Satd. Flow (perm)	896	1668	0	938	1686	0	1101	1587	0	876	1706	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5			135			11	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		130.3			262.7			221.2			119.8	
Travel Time (s)		9.4			18.9			15.9			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	290	41	152	334	17	35	155	193	14	175	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	331	0	152	351	0	35	348	0	14	193	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		26.1	26.1		24.3	24.3	
Total Split (s)	27.0	27.0		27.0	27.0		28.0	28.0		28.0	28.0	
Total Split (%)	49.1%	49.1%		49.1%	49.1%		50.9%	50.9%		50.9%	50.9%	
Maximum Green (s)	20.7	20.7		20.7	20.7		21.7	21.7		21.7	21.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	20.1	20.1		20.1	20.1		18.4	18.4		18.4	18.4	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.36	0.36		0.36	0.36	
v/c Ratio	0.09	0.50		0.41	0.53		0.09	0.53		0.04	0.31	
Control Delay (s/veh)	10.9	14.5		15.8	15.4		11.6	11.1		11.2	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.9	14.5		15.8	15.4		11.6	11.1		11.2	12.8	
LOS	B	B		B	B		B	B		B	B	
Approach Delay (s/veh)		14.2			15.5			11.2			12.7	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	1.6	20.2		9.5	22.7		2.0	13.8		0.8	11.5	
Queue Length 95th (m)	6.0	41.1		23.4	45.2		6.6	32.7		3.6	23.7	
Internal Link Dist (m)		106.3			238.7			197.2			95.8	
Turn Bay Length (m)	30.0			30.0			40.0			30.0		
Base Capacity (vph)	362	683		379	684		467	750		371	729	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.48		0.40	0.51		0.07	0.46		0.04	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 55

Actuated Cycle Length: 51.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay (s/veh): 13.6

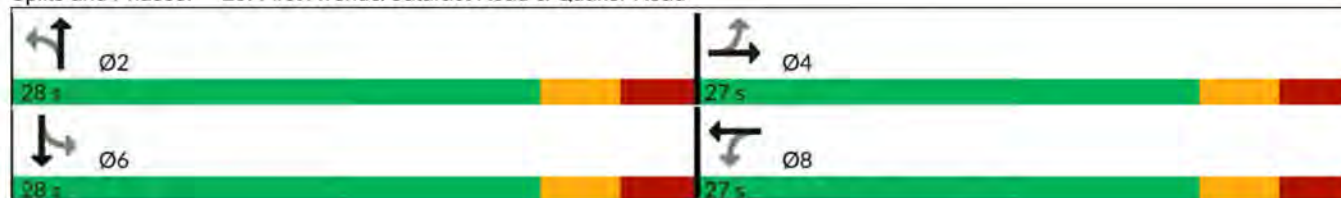
Intersection LOS: B

Intersection Capacity Utilization 79.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 20: First Avenue/Cataract Road & Quaker Road



Lanes, Volumes, Timings
21: Niagara St & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	49	129	45	31	20	167	510	62	39	717	207
Future Volume (vph)	196	49	129	45	31	20	167	510	62	39	717	207
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		65.0	0.0		22.5	75.0		0.0	22.5		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1612	1497	0	1612	1587	0	1612	3172	0	1612	3097	0
Flt Permitted	0.658			0.630			0.128			0.427		
Satd. Flow (perm)	1115	1497	0	1067	1587	0	217	3172	0	724	3097	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		147			29			18			41	
Link Speed (k/h)		50			50			50			60	
Link Distance (m)		297.6			214.3			467.2			109.3	
Travel Time (s)		21.4			15.4			33.6			6.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.70	0.70	0.70	0.96	0.96	0.96	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	223	56	147	64	44	29	174	531	65	42	779	225
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	203	0	64	73	0	174	596	0	42	1004	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		7.0	20.0		20.0	20.0	
Minimum Split (s)	11.1	37.7		37.7	37.7		12.7	31.7		31.7	31.7	
Total Split (s)	11.1	48.8		37.7	37.7		12.8	46.2		33.4	33.4	
Total Split (%)	11.7%	51.4%		39.7%	39.7%		13.5%	48.6%		35.2%	35.2%	
Maximum Green (s)	7.1	42.1		31.0	31.0		8.8	39.5		26.7	26.7	
Yellow Time (s)	3.0	3.7		3.7	3.7		3.0	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		3.0	3.0		1.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-2.9	-2.9		-2.9	-2.9		1.0	-2.6		1.0	-2.6	
Total Lost Time (s)	1.1	3.8		3.8	3.8		5.0	4.1		7.7	4.1	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings

21: Niagara St & Quaker Road

07-26-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	Min		Min	Min	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		24.0		24.0	24.0			18.0		18.0	18.0	
Pedestrian Calls (#/hr)		5		5	5			5		5	5	
Act Effect Green (s)	28.1	25.3		16.7	16.7		41.8	42.7		26.2	29.8	
Actuated g/C Ratio	0.37	0.33		0.22	0.22		0.55	0.56		0.34	0.39	
v/c Ratio	0.46	0.34		0.27	0.20		0.66	0.33		0.17	0.81	
Control Delay (s/veh)	19.9	7.2		27.9	17.3		27.3	11.2		23.7	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	19.9	7.2		27.9	17.3		27.3	11.2		23.7	28.5	
LOS	B	A		C	B		C	B		C	C	
Approach Delay (s/veh)		13.8			22.2			14.8			28.3	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	22.6	5.4		7.9	5.3		11.1	20.3		4.0	60.9	
Queue Length 95th (m)	36.1	16.4		13.1	10.2		#51.7	50.5		15.0	#139.7	
Internal Link Dist (m)		273.6			190.3			443.2			85.3	
Turn Bay Length (m)							75.0			22.5		
Base Capacity (vph)	486	959		483	735		264	1793		248	1238	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.46	0.21		0.13	0.10		0.66	0.33		0.17	0.81	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 76.1

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 21.0

Intersection LOS: C

Intersection Capacity Utilization 73.9%

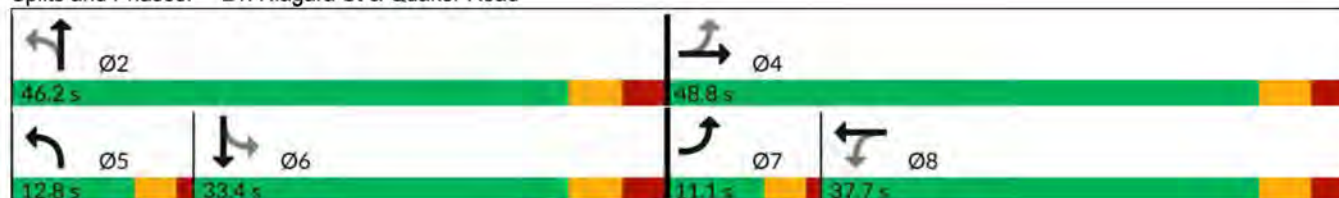
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 21: Niagara St & Quaker Road



Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Volume (vph)	2	27	3	526	70	35	2	292	433	48	450	21
Future Volume (vph)	2	27	3	526	70	35	2	292	433	48	450	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		60.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1625	0	1566	1566	0	0	1648	1401	0	3097	0
Flt Permitted		0.967		0.563				0.996			0.870	
Satd. Flow (perm)	0	1576	0	928	1566	0	0	1642	1401	0	2708	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			37				476			6
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		832.7			202.8			911.9			164.9	
Travel Time (s)		60.0			12.2			54.7			9.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.68	0.68	0.68	0.94	0.94	0.94	0.91	0.91	0.91	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	40	4	560	74	37	2	321	476	55	517	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	560	111	0	0	323	476	0	596	0
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0	6.1	12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	16.7	16.7		16.7	16.7		26.7	26.7	26.7	26.7	26.7	
Total Split (s)	16.7	16.7		26.3	43.0		27.0	27.0	27.0	27.0	27.0	
Total Split (%)	23.9%	23.9%		37.6%	61.4%		38.6%	38.6%	38.6%	38.6%	38.6%	
Maximum Green (s)	10.0	10.0		22.3	36.3		20.3	20.3	20.3	20.3	20.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0		1.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		-2.1		1.0	-2.1			-2.4	-2.4		-2.4	
Total Lost Time (s)		4.6		5.0	4.6			4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	

Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		Max	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		12.3		30.7	31.2			23.0	23.0		23.0	
Actuated g/C Ratio		0.19		0.49	0.49			0.36	0.36		0.36	
v/c Ratio		0.15		0.84	0.14			0.54	0.59		0.60	
Control Delay (s/veh)		24.2		25.9	6.1			22.2	5.5		21.1	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		24.2		25.9	6.1			22.2	5.5		21.1	
LOS		C		C	A			C	A		C	
Approach Delay (s/veh)		24.2			22.6			12.2			21.1	
Approach LOS		C			C			B			C	
Queue Length 50th (m)		4.8		47.9	4.2			35.0	0.0		34.6	
Queue Length 95th (m)		9.6		#93.5	10.7			59.5	19.0		48.8	
Internal Link Dist (m)		808.7			178.8			887.9			140.9	
Turn Bay Length (m)												
Base Capacity (vph)		310		670	983			600	814		994	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.15		0.84	0.11			0.54	0.58		0.60	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 63.2

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 18.3

Intersection LOS: B

Intersection Capacity Utilization 82.8%

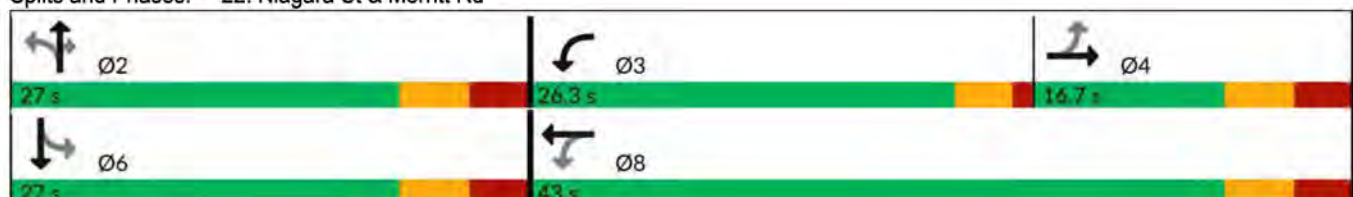
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 22: Niagara St & Merritt Rd



Lanes, Volumes, Timings

23: Clare Avenue/Line Avenue & Quaker Road

07-26-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	194	22	82	231	55	11	44	109	55	55	11
Future Volume (vph)	22	194	22	82	231	55	11	44	109	55	55	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1666	0	0	1644	0	0	1572	0	0	1672	0
Flt Permitted		0.995			0.989			0.997			0.978	
Satd. Flow (perm)	0	1666	0	0	1644	0	0	1572	0	0	1672	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		404.5			351.0			378.6			1022.4	
Travel Time (s)		29.1			60.3			27.3			73.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	211	24	89	251	60	12	48	118	60	60	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	259	0	0	400	0	0	178	0	0	132	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	66.6%					ICU Level of Service C						
Analysis Period (min)	15											

HCM 7th AWSC
23: Clare Avenue/Line Avenue & Quaker Road

07-26-2024

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	194	22	82	231	55	11	44	109	55	55	11
Future Vol, veh/h	22	194	22	82	231	55	11	44	109	55	55	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
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	24	211	24	89	251	60	12	48	118	60	60	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

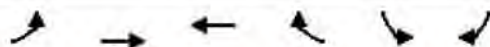
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	15.2	10.6	10.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	9%	22%	45%
Vol Thru, %	27%	82%	63%	45%
Vol Right, %	66%	9%	15%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	164	238	368	121
LT Vol	11	22	82	55
Through Vol	44	194	231	55
RT Vol	109	22	55	11
Lane Flow Rate	178	259	400	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.273	0.389	0.578	0.22
Departure Headway (Hd)	5.51	5.408	5.198	6.013
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	649	662	692	594
Service Time	3.571	3.461	3.244	4.079
HCM Lane V/C Ratio	0.274	0.391	0.578	0.222
HCM Control Delay, s/veh	10.6	11.9	15.2	10.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.1	1.8	3.7	0.8

Lanes, Volumes, Timings

25: Quaker Road

07-26-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	420	425	0	0	0
Future Volume (vph)	0	420	425	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1697	0	1731	0
Flt Permitted						
Satd. Flow (perm)	0	1697	1697	0	1731	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		188.6	76.8		55.5	
Travel Time (s)		13.6	5.5		4.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	457	462	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	457	462	0	0	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
25: Quaker Road

07-26-2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	420	425	0	0	0
Future Vol, veh/h	0	420	425	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	0	457	462	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	462	0	-	0	918	462
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	457	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1110	-	-	-	304	604
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1110	-	-	-	304	604
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	639	-
Stage 2	-	-	-	-	642	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1110	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lanes, Volumes, Timings

29: Quaker Road

07-26-2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1697	0	0	1697	1697	0
Flt Permitted						
Satd. Flow (perm)	1697	0	0	1697	1697	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	142.9			130.3	63.5	
Travel Time (s)	10.3			9.4	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1020	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1020	1083
Mov Cap-2 Maneuver	-	-	-	-	1020	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings
102: First Avenue & Merritt Rd

07-26-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1697	0	1697	0	0	1697
Flt Permitted						
Satd. Flow (perm)	1697	0	1697	0	0	1697
Link Speed (k/h)	50		50			50
Link Distance (m)	832.7		566.2			139.5
Travel Time (s)	60.0		40.8			10.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

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

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1	0	0
Stage 1	0	-	-
Stage 2	1	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	-	-
Stage 1	-	-	-
Stage 2	1022	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1022	-	-
Mov Cap-2 Maneuver	1022	-	-
Stage 1	-	-	-
Stage 2	1022	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	0	0	-
HCM Lane LOS	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-

APPENDIX F – TOTAL FUTURE TRAFFIC (NO IMPROVEMENTS)

Lanes, Volumes, Timings

1: Clare Avenue

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	38	164	15	13	120
Future Volume (vph)	47	38	164	15	13	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1583	0	1712	0	0	1722
Flt Permitted	0.973					0.995
Satd. Flow (perm)	1583	0	1712	0	0	1722
Link Speed (k/h)	50		48			48
Link Distance (m)	139.9		634.5			378.6
Travel Time (s)	10.1		47.6			28.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	51	41	178	16	14	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	194	0	0	144
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	38	164	15	13	120
Future Vol, veh/h	47	38	164	15	13	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	51	41	178	16	14	130

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	345	186	0
Stage 1	186	-	-
Stage 2	159	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	656	861	-
Stage 1	850	-	-
Stage 2	875	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	648	861	-
Mov Cap-2 Maneuver	648	-	-
Stage 1	850	-	-
Stage 2	865	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v10.66		0	0.74
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	729	176
HCM Lane V/C Ratio	-	-	0.127	0.01
HCM Control Delay (s/veh)	-	-	10.7	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Lanes, Volumes, Timings

2: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	342	27	26	187	33	10	0	81	44	0	11
Future Volume (vph)	22	342	27	26	187	33	10	0	81	44	0	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1680	0	0	1666	0	0	1514	0	0	1620	0
Flt Permitted		0.997			0.995			0.994			0.962	
Satd. Flow (perm)	0	1680	0	0	1666	0	0	1514	0	0	1620	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		351.0			190.3			36.8			63.5	
Travel Time (s)		25.3			13.7			2.6			4.6	
Confl. Peds. (#/hr)	20		20									
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	372	29	28	203	36	11	0	88	48	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	425	0	0	267	0	0	99	0	0	60	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.1%						ICU Level of Service A					
Analysis Period (min)	15											

HCM 7th TWSC
2: Quaker Road

12-16-2024

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	342	27	26	187	33	10	0	81	44	0	11
Future Vol, veh/h	22	342	27	26	187	33	10	0	81	44	0	11
Conflicting Peds, #/hr	20	0	20	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	24	372	29	28	203	36	11	0	88	48	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	421	0	0	714	770	406	717	767	241
Stage 1	-	-	-	-	-	-	454	454	-	298	298	-
Stage 2	-	-	-	-	-	-	260	316	-	420	469	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1317	-	-	1149	-	-	349	334	649	347	335	803
Stage 1	-	-	-	-	-	-	589	573	-	715	671	-
Stage 2	-	-	-	-	-	-	749	659	-	615	564	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1295	-	-	1129	-	-	320	306	638	279	307	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	306	-	279	307	-
Stage 1	-	-	-	-	-	-	566	549	-	683	640	-
Stage 2	-	-	-	-	-	-	717	629	-	518	541	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.44	0.87	12.55	18.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	575	100	-	-	185	-	-	320
HCM Lane V/C Ratio	0.172	0.018	-	-	0.025	-	-	0.187
HCM Control Delay (s/veh)	12.6	7.8	0	-	8.3	0	-	18.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0.7

Lanes, Volumes, Timings

3: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	462	3	20	242	22	8	0	59	1	0	1
Future Volume (vph)	1	462	3	20	242	22	8	0	59	1	0	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1695	0	0	1678	0	0	1517	0	0	1574	0
Flt Permitted					0.996			0.994			0.976	
Satd. Flow (perm)	0	1695	0	0	1678	0	0	1517	0	0	1574	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		190.3			295.7			54.2			58.9	
Travel Time (s)		13.7			21.3			3.9			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	1	502	3	22	263	24	9	0	64	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	506	0	0	309	0	0	73	0	0	2	0
Sign Control	FreeFreeStopStop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.5%				ICU Level of Service A							
Analysis Period (min)	15											

HCM 7th TWSC
3: Quaker Road

12-16-2024

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	1	462	3	20	242	22	8	0	59	1	0	1
Future Vol, veh/h	1	462	3	20	242	22	8	0	59	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	1	502	3	22	263	24	9	0	64	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	287	0	0	505	0	0	813	836	504	823	826	275
Stage 1	-	-	-	-	-	-	506	506	-	318	318	-
Stage 2	-	-	-	-	-	-	307	330	-	504	508	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1287	-	-	1070	-	-	300	305	572	295	309	769
Stage 1	-	-	-	-	-	-	553	543	-	697	657	-
Stage 2	-	-	-	-	-	-	708	649	-	554	542	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1287	-	-	1070	-	-	292	298	572	255	302	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	292	298	-	255	302	-
Stage 1	-	-	-	-	-	-	552	542	-	680	641	-
Stage 2	-	-	-	-	-	-	689	633	-	491	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.02		0.59	13.17	14.45
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	4	-	-	125	-	-	383
HCM Lane V/C Ratio	0.142	0.001	-	-	0.02	-	-	0.006
HCM Control Delay (s/veh)	13.2	7.8	0	-	8.4	0	-	14.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0

Lanes, Volumes, Timings

4: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	10	0	12	0	475	6	7	645	22
Future Volume (vph)	22	0	22	10	0	12	0	475	6	7	645	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1569	0	0	1688	0	0	1682	0
Flt Permitted		0.976			0.978						0.999	
Satd. Flow (perm)	0	1543	0	0	1569	0	0	1688	0	0	1682	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		37.0			61.8			46.9			105.7	
Travel Time (s)		0.0			4.4			4.2			7.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	11	0	13	0	516	7	8	701	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	24	0	0	523	0	0	733	0
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	54.7%				ICU Level of Service A							
Analysis Period (min)	15											

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	22	0	22	10	0	12	0	475	6	7	645	22
Future Vol, veh/h	22	0	22	10	0	12	0	475	6	7	645	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	11	0	13	0	516	7	8	701	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1245	1251	713	1236	1260	520	725	0	0	523	0	0
Stage 1	728	728	-	520	520	-	-	-	-	-	-	-
Stage 2	516	523	-	716	740	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	151	172	432	154	170	560	878	-	-	1054	-	-
Stage 1	415	428	-	543	532	-	-	-	-	-	-	-
Stage 2	542	531	-	424	423	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	146	170	432	144	168	560	878	-	-	1054	-	-
Mov Cap-2 Maneuver	146	170	-	144	168	-	-	-	-	-	-	-
Stage 1	410	423	-	543	532	-	-	-	-	-	-	-
Stage 2	529	531	-	396	418	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v26.12			21.48		0		0.09	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	878	-	-	218	242	19	-	-
HCM Lane V/C Ratio	-	-	-	0.22	0.099	0.007	-	-
HCM Control Delay (s/veh)	0	-	-	26.1	21.5	8.4	0	-
HCM Lane LOS	A	-	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	-	-

Lanes, Volumes, Timings

5: Rice Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	481	0	0	677
Future Volume (vph)	0	0	481	0	0	677
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.3	3.3	3.3	3.3
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1692	0	0	1692
Fit Permitted						
Satd. Flow (perm)	1731	0	1692	0	0	1692
Link Speed (k/h)	50		40			50
Link Distance (m)	47.0		212.0			46.9
Travel Time (s)	3.4		19.1			3.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	523	0	0	736
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	523	0	0	736
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	481	0	0	677
Future Vol, veh/h	0	0	481	0	0	677
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	523	0	0	736
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1259	523	0	0	523	0
Stage 1	523	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	190	558	-	-	1054	-
Stage 1	599	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	190	558	-	-	1054	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1054	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings

6: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	22	20	2	25	0	421	19	14	596	67
Future Volume (vph)	36	1	22	20	2	25	0	421	19	14	596	67
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1562	0	0	1573	0	0	1682	0	0	1665	0
Flt Permitted		0.970			0.979						0.999	
Satd. Flow (perm)	0	1562	0	0	1573	0	0	1682	0	0	1665	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		35.2			98.9			148.6			212.0	
Travel Time (s)		0.0			7.1			13.4			15.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	39	1	24	22	2	27	0	458	21	15	648	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	51	0	0	479	0	0	736	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	63.0%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	1	22	20	2	25	0	421	19	14	596	67
Future Vol, veh/h	36	1	22	20	2	25	0	421	19	14	596	67
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	39	1	24	22	2	27	0	458	21	15	648	73

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1173	1193	684	1147	1219	468	721	0	0	478	0	0
Stage 1	715	715	-	468	468	-	-	-	-	-	-	-
Stage 2	459	478	-	679	751	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	169	187	449	178	180	599	881	-	-	1095	-	-
Stage 1	422	435	-	579	561	-	-	-	-	-	-	-
Stage 2	582	555	-	445	418	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	156	182	449	163	176	599	881	-	-	1095	-	-
Mov Cap-2 Maneuver	156	182	-	163	176	-	-	-	-	-	-	-
Stage 1	412	424	-	579	561	-	-	-	-	-	-	-
Stage 2	554	555	-	410	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v30.13		21.58	0	0.17
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	881	-	-	206 268	36	-	-
HCM Lane V/C Ratio	-	-	-	0.311 0.191	0.014	-	-
HCM Control Delay (s/veh)	0	-	-	30.1 21.6	8.3	0	-
HCM Lane LOS	A	-	-	D C	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3 0.7	0	-	-

Lanes, Volumes, Timings

7: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	67	22	0	4	22	457	6	2	456	5
Future Volume (vph)	10	0	67	22	0	4	22	457	6	2	456	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1488	0	0	1596	0	0	1652	0	0	1657	0
Flt Permitted		0.993			0.959			0.998				
Satd. Flow (perm)	0	1488	0	0	1596	0	0	1652	0	0	1657	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			59.6			232.4			190.6	
Travel Time (s)		4.7			0.0			16.7			13.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	0	73	24	0	4	24	497	7	2	496	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	28	0	0	528	0	0	503	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	57.5%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	67	22	0	4	22	457	6	2	456	5
Future Vol, veh/h	10	0	67	22	0	4	22	457	6	2	456	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	73	24	0	4	24	497	7	2	496	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1047	1054	498	1048	1053	500	501	0	0	503	0	0
Stage 1	503	503	-	548	548	-	-	-	-	-	-	-
Stage 2	545	551	-	500	505	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	206	226	572	206	226	571	1063	-	-	1061	-	-
Stage 1	551	542	-	521	517	-	-	-	-	-	-	-
Stage 2	523	515	-	553	540	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	197	218	572	174	218	571	1063	-	-	1061	-	-
Mov Cap-2 Maneuver	197	218	-	174	218	-	-	-	-	-	-	-
Stage 1	549	540	-	504	501	-	-	-	-	-	-	-
Stage 2	503	499	-	481	539	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v14.58			26.65		0.38		0.04					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	81	-	-	459	194	8	-	-				
HCM Lane V/C Ratio	0.022	-	-	0.182	0.145	0.002	-	-				
HCM Control Delay (s/veh)	8.5	0	-	14.6	26.7	8.4	0	-				
HCM Lane LOS	A	A	-	B	D	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.5	0	-	-				

Lanes, Volumes, Timings

8: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	67	0	0	0	22	449	0	0	395	5
Future Volume (vph)	10	0	67	0	0	0	22	449	0	0	395	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1488	0	0	1697	0	0	1655	0	0	1655	0
Flt Permitted		0.993						0.998				
Satd. Flow (perm)	0	1488	0	0	1697	0	0	1655	0	0	1655	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		58.4			64.9			190.6			68.0	
Travel Time (s)		4.2			0.0			13.7			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	0	73	0	0	0	24	488	0	0	429	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	0	0	0	512	0	0	434	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	56.9%						ICU Level of Service B					
Analysis Period (min)	15											

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	10	0	67	0	0	0	22	449	0	0	395	5
Future Vol, veh/h	10	0	67	0	0	0	22	449	0	0	395	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	73	0	0	0	24	488	0	0	429	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	968	968	432	965	971	488	435	0	0	488	0	0
Stage 1	432	432	-	536	536	-	-	-	-	-	-	-
Stage 2	536	536	-	429	435	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	233	254	623	234	253	580	1125	-	-	1075	-	-
Stage 1	602	582	-	529	523	-	-	-	-	-	-	-
Stage 2	529	523	-	604	581	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	227	246	623	201	246	580	1125	-	-	1075	-	-
Mov Cap-2 Maneuver	227	246	-	201	246	-	-	-	-	-	-	-
Stage 1	602	582	-	513	508	-	-	-	-	-	-	-
Stage 2	513	508	-	533	581	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v13.48		0	0.39	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	84	-	-	508	-	1075	-
HCM Lane V/C Ratio	0.021	-	-	0.165	-	-	-
HCM Control Delay (s/veh)	8.3	0	-	13.5	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	-	0	-

Lanes, Volumes, Timings

9: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	448	16	26	272	3	54	0	81	12	0	13
Future Volume (vph)	5	448	16	26	272	3	54	0	81	12	0	13
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.7		45.7	45.7		45.7	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1690	0	0	1691	0	0	1559	0	0	1571	0
Flt Permitted					0.996			0.980			0.976	
Satd. Flow (perm)	0	1690	0	0	1691	0	0	1559	0	0	1571	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		326.4			220.0			48.8			221.2	
Travel Time (s)		23.5			35.5			0.0			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	487	17	28	296	3	59	0	88	13	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	509	0	0	327	0	0	147	0	0	27	0
Sign Control	Free Free Stop Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.8%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	448	16	26	272	3	54	0	81	12	0	13
Future Vol, veh/h	5	448	16	26	272	3	54	0	81	12	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	5	487	17	28	296	3	59	0	88	13	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	299	0	0	504	0	0	859	862	496	852	869	297
Stage 1	-	-	-	-	-	-	507	507	-	354	354	-
Stage 2	-	-	-	-	-	-	352	355	-	498	515	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1274	-	-	1071	-	-	279	295	578	282	292	747
Stage 1	-	-	-	-	-	-	552	543	-	667	634	-
Stage 2	-	-	-	-	-	-	669	633	-	558	538	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1274	-	-	1071	-	-	263	284	578	230	281	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	263	284	-	230	281	-
Stage 1	-	-	-	-	-	-	549	540	-	646	614	-
Stage 2	-	-	-	-	-	-	635	613	-	470	535	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.08	0.73	19.62	15.83
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	19	-	-	155	-	-	359
HCM Lane V/C Ratio	0.375	0.004	-	-	0.026	-	-	0.076
HCM Control Delay (s/veh)	19.6	7.8	0	-	8.5	0	-	15.8
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	0.2

Lanes, Volumes, Timings

10: Quaker Road

12-16-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	538	3	14	342	7	46
Future Volume (vph)	538	3	14	342	7	46
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1695	0	0	1726	1515	0
Flt Permitted				0.998	0.993	
Satd. Flow (perm)	1695	0	0	1726	1515	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	220.0			144.9	102.8	
Travel Time (s)	15.8			19.7	7.4	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	585	3	15	372	8	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	0	0	387	58	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	538	3	14	342	7	46
Future Vol, veh/h	538	3	14	342	7	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	0	2	0
Mvmt Flow	585	3	15	372	8	50

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	588
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	987
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	987
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.34	13.98
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	458	-	-	71	-
HCM Lane V/C Ratio	0.126	-	-	0.015	-
HCM Control Delay (s/veh)	14	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Lanes, Volumes, Timings

11: First Avenue

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	0	84	22	0	22	19	338	0	22	550	33
Future Volume (vph)	59	0	84	22	0	22	19	338	0	22	550	33
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1544	0	0	1574	0	0	1725	0	0	1715	0
Flt Permitted		0.980			0.976			0.997			0.998	
Satd. Flow (perm)	0	1544	0	0	1574	0	0	1725	0	0	1715	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		91.1			108.9			108.6			221.2	
Travel Time (s)		6.6			7.8			7.8			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	64	0	91	24	0	24	21	367	0	24	598	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	0	48	0	0	388	0	0	658	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.7%				ICU Level of Service B							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	59	0	84	22	0	22	19	338	0	22	550	33
Future Vol, veh/h	59	0	84	22	0	22	19	338	0	22	550	33
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	64	0	91	24	0	24	21	367	0	24	598	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1072	1072	616	1054	1090	367	634	0	0	367	0	0
Stage 1	664	664	-	409	409	-	-	-	-	-	-	-
Stage 2	409	409	-	646	682	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	200	222	491	206	217	682	959	-	-	1202	-	-
Stage 1	453	462	-	624	600	-	-	-	-	-	-	-
Stage 2	624	600	-	464	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	182	210	491	158	204	682	959	-	-	1202	-	-
Mov Cap-2 Maneuver	182	210	-	158	204	-	-	-	-	-	-	-
Stage 1	439	447	-	607	583	-	-	-	-	-	-	-
Stage 2	585	583	-	366	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v31.15		22.24	0.47	0.29
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	96	-	-	288	256	65	-
HCM Lane V/C Ratio	0.022	-	-	0.539	0.187	0.02	-
HCM Control Delay (s/veh)	8.8	0	-	31.2	22.2	8.1	0
HCM Lane LOS	A	A	-	D	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	3	0.7	0.1	-

Lanes, Volumes, Timings

12: Cataract Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	15	299	13	5	522
Future Volume (vph)	40	15	299	13	5	522
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1608	0	1720	0	0	1730
Flt Permitted	0.965					
Satd. Flow (perm)	1608	0	1720	0	0	1730
Link Speed (k/h)	50		50			50
Link Distance (m)	65.2		119.8			70.9
Travel Time (s)	4.7		8.6			5.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	43	16	325	14	5	567
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	339	0	0	572
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
12: Cataract Road

12-16-2024

Intersection

Int Delay, s/veh 1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	15	299	13	5	522
Future Vol, veh/h	40	15	299	13	5	522
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	2	0
Mvmt Flow	43	16	325	14	5	567

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	910	332	0
Stage 1	332	-	-
Stage 2	578	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	307	714	-
Stage 1	731	-	-
Stage 2	565	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	305	714	-
Mov Cap-2 Maneuver	305	-	-
Stage 1	731	-	-
Stage 2	561	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v16.91		0	0.08
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	362	17
HCM Lane V/C Ratio	-	-	0.165	0.004
HCM Control Delay (s/veh)	-	-	16.9	8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings

13: Cataract Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	15	301	13	5	487
Future Volume (vph)	40	15	301	13	5	487
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1608	0	1720	0	0	1731
Flt Permitted	0.965					
Satd. Flow (perm)	1608	0	1720	0	0	1731
Link Speed (k/h)	50		50			50
Link Distance (m)	51.9		70.9			111.7
Travel Time (s)	3.7		5.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	43	16	327	14	5	529
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	341	0	0	534
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	15	301	13	5	487
Future Vol, veh/h	40	15	301	13	5	487
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	43	16	327	14	5	529

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	874	334	0
Stage 1	334	-	-
Stage 2	540	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	323	712	-
Stage 1	730	-	-
Stage 2	588	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	321	712	-
Mov Cap-2 Maneuver	321	-	-
Stage 1	730	-	-
Stage 2	584	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v16.33		0	0.08
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	377	18
HCM Lane V/C Ratio	-	-	0.159	0.004
HCM Control Delay (s/veh)	-	-	16.3	7.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings
14: Cataract Road & Street 'D'

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	27	295	21	9	427
Future Volume (vph)	65	27	295	21	9	427
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	45.7	45.7		45.7	45.7	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1607	0	1715	0	0	1729
Flt Permitted	0.966					0.999
Satd. Flow (perm)	1607	0	1715	0	0	1729
Link Speed (k/h)	48		50			50
Link Distance (m)	162.3		111.7			177.0
Travel Time (s)	41.4		26.6			10.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	71	29	321	23	10	464
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	344	0	0	474
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
14: Cataract Road & Street 'D'

12-16-2024

Intersection

Int Delay, s/veh 1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	27	295	21	9	427
Future Vol, veh/h	65	27	295	21	9	427
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	71	29	321	23	10	464

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	816	332	0
Stage 1	332	-	-
Stage 2	484	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	349	714	-
Stage 1	731	-	-
Stage 2	624	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	714	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	731	-	-
Stage 2	617	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v16.69		0	0.16
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	407	37
HCM Lane V/C Ratio	-	-	0.246	0.008
HCM Control Delay (s/veh)	-	-	16.7	8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1	0

Lanes, Volumes, Timings
15: First Avenue

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	0	196	37	0	14	68	242	12	4	202	28
Future Volume (vph)	89	0	196	37	0	14	68	242	12	4	202	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1546	0	0	1608	0	0	1705	0	0	1701	0
Flt Permitted		0.985			0.965			0.990			0.999	
Satd. Flow (perm)	0	1546	0	0	1608	0	0	1705	0	0	1701	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.4			80.3			177.0			680.8	
Travel Time (s)		9.7			0.0			12.7			39.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	97	0	213	40	0	15	74	263	13	4	220	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	310	0	0	55	0	0	350	0	0	254	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	60.4%						ICU Level of Service B					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	89	0	196	37	0	14	68	242	12	4	202	28
Future Vol, veh/h	89	0	196	37	0	14	68	242	12	4	202	28
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	97	0	213	40	0	15	74	263	13	4	220	30

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	654	667	235	646	676	270	250	0	0	276	0	0
Stage 1	243	243	-	417	417	-	-	-	-	-	-	-
Stage 2	411	424	-	228	259	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	382	382	809	388	378	774	1327	-	-	1299	-	-
Stage 1	765	708	-	617	594	-	-	-	-	-	-	-
Stage 2	622	591	-	779	697	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	349	355	809	266	351	774	1327	-	-	1299	-	-
Mov Cap-2 Maneuver	349	355	-	266	351	-	-	-	-	-	-	-
Stage 1	762	705	-	576	555	-	-	-	-	-	-	-
Stage 2	570	552	-	572	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	18.42	18.38	1.66	0.13
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	377	-	-	573	324	30	-	-
HCM Lane V/C Ratio	0.056	-	-	0.541	0.171	0.003	-	-
HCM Control Delay (s/veh)	7.9	0	-	18.4	18.4	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	3.2	0.6	0	-	-

Lanes, Volumes, Timings

16: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	718	44	22	470	6	22	0	22	16	0	31
Future Volume (vph)	10	718	44	22	470	6	22	0	22	16	0	31
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1682	0	0	1690	0	0	1543	0	0	1550	0
Flt Permitted		0.999			0.998			0.976			0.984	
Satd. Flow (perm)	0	1682	0	0	1690	0	0	1543	0	0	1550	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		262.7			188.6			71.5			81.3	
Travel Time (s)		18.9			13.6			0.0			5.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	11	780	48	24	511	7	24	0	24	17	0	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	839	0	0	542	0	0	48	0	0	51	0
Sign Control	Free Free Stop Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.7%					ICU Level of Service B						
Analysis Period (min)	15											

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	718	44	22	470	6	22	0	22	16	0	31
Future Vol, veh/h	10	718	44	22	470	6	22	0	22	16	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	11	780	48	24	511	7	24	0	24	17	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	517	0	0	828	0	0	1385	1391	804	1364	1412	514
Stage 1	-	-	-	-	-	-	826	826	-	562	562	-
Stage 2	-	-	-	-	-	-	559	565	-	802	850	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1059	-	-	803	-	-	121	142	383	126	138	564
Stage 1	-	-	-	-	-	-	366	386	-	515	510	-
Stage 2	-	-	-	-	-	-	514	508	-	380	377	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1059	-	-	803	-	-	107	133	383	111	130	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	133	-	111	130	-
Stage 1	-	-	-	-	-	-	359	379	-	494	488	-
Stage 2	-	-	-	-	-	-	463	487	-	350	370	-

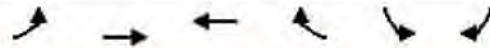
Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.11		0.42	35.02	24.4
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	167	23	-	-	79	-	-	236
HCM Lane V/C Ratio	0.287	0.01	-	-	0.03	-	-	0.216
HCM Control Delay (s/veh)	35	8.4	0	-	9.6	0	-	24.4
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.8

Lanes, Volumes, Timings

17: Quaker Road

12-16-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (vph)	5	761	450	8	25	15
Future Volume (vph)	5	761	450	8	25	15
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1694	0	1575	0
Flt Permitted					0.970	
Satd. Flow (perm)	0	1697	1694	0	1575	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		76.8	297.6		65.7	
Travel Time (s)		5.5	21.4		4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	5	827	489	9	27	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	832	498	0	43	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 57.8%

ICU Level of Service B

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	761	450	8	25	15
Future Vol, veh/h	5	761	450	8	25	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	0
Mvmt Flow	5	827	489	9	27	16

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	498	0	0 1332 493
Stage 1	-	-	- 493 -
Stage 2	-	-	- 838 -
Critical Hdwy	4.1	-	- 6.42 6.2
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.2	-	- 3.518 3.3
Pot Cap-1 Maneuver	1077	-	- 170 580
Stage 1	-	-	- 614 -
Stage 2	-	-	- 424 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1077	-	- 169 580
Mov Cap-2 Maneuver	-	-	- 169 -
Stage 1	-	-	- 608 -
Stage 2	-	-	- 424 -

Approach	EB	WB	SB
HCM Control Delay, s/v 0.05		0	24.29
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	12	-	-	-	230
HCM Lane V/C Ratio	0.005	-	-	-	0.189
HCM Control Delay (s/veh)	8.4	0	-	-	24.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	138	109	12	57	102	44	217	35	71	234	13
Future Volume (vph)	48	138	109	12	57	102	44	217	35	71	234	13
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	60.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1599	0	0	1531	0	1612	1656	0	1612	1683	0
Flt Permitted		0.923			0.964		0.591			0.584		
Satd. Flow (perm)	0	1487	0	0	1481	0	1003	1656	0	990	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			111			16			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		252.0			404.5			1006.2			780.9	
Travel Time (s)		18.1			29.1			72.4			56.2	
Confl. Peds. (#/hr)	4					4			1	1		
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	150	118	13	62	111	48	236	38	77	254	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	320	0	0	186	0	48	274	0	77	268	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.3	32.3		32.3	32.3		32.3	32.3		32.3	32.3	
Total Split (s)	32.3	32.3		32.3	32.3		32.7	32.7		32.7	32.7	
Total Split (%)	49.7%	49.7%		49.7%	49.7%		50.3%	50.3%		50.3%	50.3%	
Maximum Green (s)	26.0	26.0		26.0	26.0		26.4	26.4		26.4	26.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		-2.5			-2.5		-2.3	-2.3		-2.3	-2.3	
Total Lost Time (s)		3.8			3.8		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		4	4		1	1		0	0	
Act Effct Green (s)		15.7			15.7		15.9	15.9		15.9	15.9	
Actuated g/C Ratio		0.39			0.39		0.40	0.40		0.40	0.40	
v/c Ratio		0.52			0.29		0.12	0.41		0.20	0.40	
Control Delay (s/veh)		11.4			5.6		9.9	11.2		10.7	11.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		11.4			5.6		9.9	11.2		10.7	11.5	
LOS		B			A		A	B		B	B	
Approach Delay (s/veh)		11.4			5.6			11.0			11.3	
Approach LOS		B			A			B			B	
Queue Length 50th (m)		9.8			2.4		1.7	9.9		2.7	10.1	
Queue Length 95th (m)		39.3			15.3		8.7	35.4		12.9	35.6	
Internal Link Dist (m)		228.0			380.5			982.2			756.9	
Turn Bay Length (m)							60.0			60.0		
Base Capacity (vph)		1153			1161		774	1282		764	1300	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.28			0.16		0.06	0.21		0.10	0.21	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 40.1

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay (s/veh): 10.3

Intersection LOS: B

Intersection Capacity Utilization 65.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 18: Pelham St & Quaker Road



Lanes, Volumes, Timings
19: Rice Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	264	153	129	147	62	69	321	119	86	391	67
Future Volume (vph)	102	264	153	129	147	62	69	321	119	86	391	67
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1615	0	1644	1631	0	1607	1624	0	1607	1654	0
Flt Permitted	0.617			0.394			0.319			0.343		
Satd. Flow (perm)	1068	1615	0	682	1631	0	540	1624	0	580	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			40			38			18	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		295.7			326.4			105.7			232.4	
Travel Time (s)		21.3			23.5			9.5			16.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	111	287	166	140	160	67	75	349	129	93	425	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	453	0	140	227	0	75	478	0	93	498	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		20.3	20.3		20.3	20.3	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.7	22.7		22.7	22.7		24.7	24.7		24.7	24.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings 19: Rice Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	21.2	21.2		21.2	21.2		19.7	19.7		19.7	19.7	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.37	0.37		0.37	0.37	
v/c Ratio	0.26	0.67		0.52	0.34		0.38	0.77		0.44	0.81	
Control Delay (s/veh)	14.6	19.0		22.6	12.1		18.8	23.2		20.2	26.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.6	19.0		22.6	12.1		18.8	23.2		20.2	26.2	
LOS	B	B		C	B		B	C		C	C	
Approach Delay (s/veh)		18.1			16.1			22.6			25.3	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	7.4	31.8		10.5	12.5		4.9	34.4		6.2	38.3	
Queue Length 95th (m)	18.5	#66.2		#28.8	28.3		15.0	67.7		18.1	#76.4	
Internal Link Dist (m)		271.7			302.4			81.7			208.4	
Turn Bay Length (m)	30.0			30.0			50.0			50.0		
Base Capacity (vph)	457	723		292	721		251	777		270	780	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.63		0.48	0.31		0.30	0.62		0.34	0.64	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 53.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 21.0

Intersection LOS: C

Intersection Capacity Utilization 98.0%

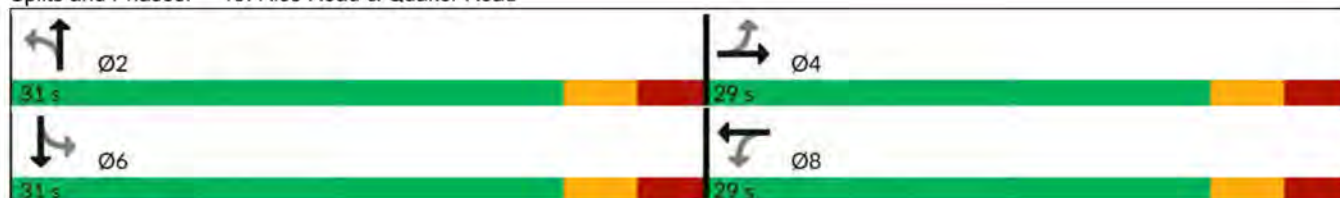
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 19: Rice Road & Quaker Road



Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	480	51	198	267	59	67	201	155	136	355	72
Future Volume (vph)	51	480	51	198	267	59	67	201	155	136	355	72
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	50.0		45.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1676	0	1644	1657	0	1644	1618	0	1644	1687	0
Flt Permitted	0.522			0.310			0.292			0.398		
Satd. Flow (perm)	903	1676	0	536	1657	0	505	1618	0	689	1687	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			24			63			16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		128.3			262.7			221.2			119.8	
Travel Time (s)		9.2			18.9			15.9			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	55	522	55	215	290	64	73	218	168	148	386	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	577	0	215	354	0	73	386	0	148	464	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		24.3	24.3		24.3	24.3	
Total Split (s)	38.0	38.0		38.0	38.0		27.0	27.0		27.0	27.0	
Total Split (%)	58.5%	58.5%		58.5%	58.5%		41.5%	41.5%		41.5%	41.5%	
Maximum Green (s)	31.7	31.7		31.7	31.7		20.7	20.7		20.7	20.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	28.0	28.0		28.0	28.0		18.9	18.9		18.9	18.9	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.32	0.32		0.32	0.32	
v/c Ratio	0.13	0.73		0.86	0.45		0.46	0.70		0.68	0.85	
Control Delay (s/veh)	10.2	19.3		49.0	12.2		28.6	23.4		38.3	36.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	10.2	19.3		49.0	12.2		28.6	23.4		38.3	36.7	
LOS	B	B		D	B		C	C		D	D	
Approach Delay (s/veh)		18.5			26.2			24.2			37.1	
Approach LOS		B			C			C			D	
Queue Length 50th (m)	3.4	49.6		20.7	23.8		6.9	33.3		15.3	49.8	
Queue Length 95th (m)	8.8	83.6		#58.1	41.9		18.9	#62.2		#40.5	#97.6	
Internal Link Dist (m)		104.3			238.7			197.2			95.8	
Turn Bay Length (m)	30.0			30.0			50.0			50.0		
Base Capacity (vph)	487	910		289	906		177	611		243	605	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.63		0.74	0.39		0.41	0.63		0.61	0.77	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 59.8

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 26.6

Intersection LOS: C

Intersection Capacity Utilization 101.8%

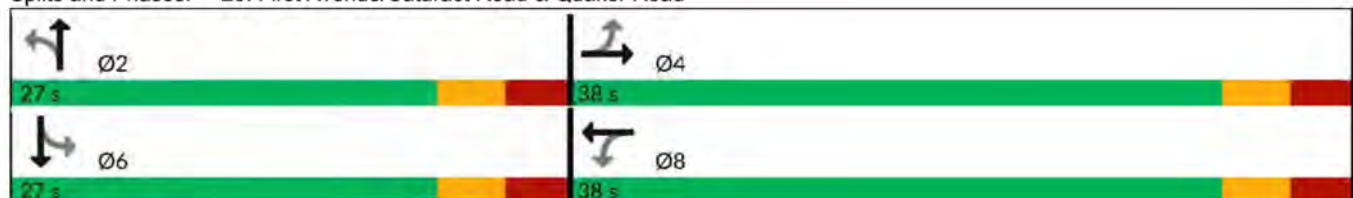
ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 20: First Avenue/Cataract Road & Quaker Road



Lanes, Volumes, Timings
21: Niagara St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	24	318	32	26	27	126	390	26	15	290	198
Future Volume (vph)	442	24	318	32	26	27	126	390	26	15	290	198
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		65.0	0.0		22.5	75.0		0.0	22.5		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1612	1442	0	1612	1557	0	1612	3195	0	1612	2998	0
Flt Permitted	0.661			0.534			0.409			0.403		
Satd. Flow (perm)	1121	1442	0	905	1557	0	693	3195	0	684	2998	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		357			33			9			213	
Link Speed (k/h)		50			50			50			60	
Link Distance (m)		297.6			214.3			467.2			109.3	
Travel Time (s)		21.4			15.4			33.6			6.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.82	0.82	0.82	0.78	0.78	0.78	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	497	27	357	39	32	33	162	500	33	16	312	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	497	384	0	39	65	0	162	533	0	16	525	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	13.1	37.7		37.7	37.7		31.7	31.7		31.7	31.7	
Total Split (s)	13.6	51.3		37.7	37.7		38.7	38.7		38.7	38.7	
Total Split (%)	15.1%	57.0%		41.9%	41.9%		43.0%	43.0%		43.0%	43.0%	
Maximum Green (s)	9.6	44.6		31.0	31.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-2.9	-2.9		-2.9	-2.9		1.0	-2.6		1.0	-2.6	
Total Lost Time (s)	1.1	3.8		3.8	3.8		7.7	4.1		7.7	4.1	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings

21: Niagara St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0		24.0	24.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)		5		5	5		5	5		5	5	
Act Effect Green (s)	29.9	27.0		16.6	16.6		23.5	27.3		23.5	27.3	
Actuated g/C Ratio	0.48	0.43		0.26	0.26		0.37	0.44		0.37	0.44	
v/c Ratio	0.77	0.47		0.16	0.15		0.63	0.38		0.06	0.37	
Control Delay (s/veh)	22.2	3.9		21.4	12.4		32.4	14.5		16.9	8.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.2	3.9		21.4	12.4		32.4	14.5		16.9	8.9	
LOS	C	A		C	B		C	B		B	A	
Approach Delay (s/veh)		14.3			15.8			18.7			9.2	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	35.0	1.5		3.4	2.7		14.3	19.7		1.1	11.0	
Queue Length 95th (m)	77.6	14.5		9.9	10.0		38.3	40.1		6.3	31.8	
Internal Link Dist (m)		273.6			190.3			443.2			85.3	
Turn Bay Length (m)							75.0			22.5		
Base Capacity (vph)	644	1205		517	904		362	1868		357	1838	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.32		0.08	0.07		0.45	0.29		0.04	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 62.7

Natural Cycle: 85

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 14.5

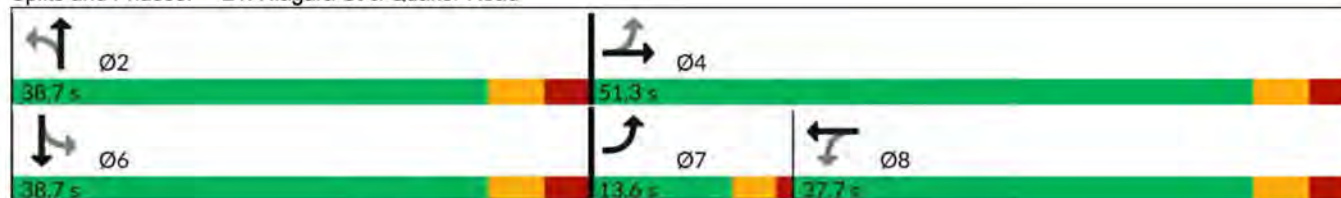
Intersection LOS: B

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 21: Niagara St & Quaker Road



Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Volume (vph)	10	156	3	358	73	57	4	346	599	29	203	3
Future Volume (vph)	10	156	3	358	73	57	4	346	599	29	203	3
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		60.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1638	0	1566	1539	0	0	1647	1401	0	3106	0
Flt Permitted		0.972		0.290				0.996			0.876	
Satd. Flow (perm)	0	1597	0	478	1539	0	0	1642	1401	0	2738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			66				624			2
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		834.8			202.8			911.9			164.9	
Travel Time (s)		60.1			12.2			54.7			9.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.79	0.79	0.79	0.86	0.86	0.86	0.96	0.96	0.96	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	197	4	416	85	66	4	360	624	38	264	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	416	151	0	0	364	624	0	306	0
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0	6.1	12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	16.7	16.7		16.7	16.7		26.7	26.7	26.7	26.7	26.7	
Total Split (s)	17.6	17.6		23.2	40.8		29.2	29.2	29.2	29.2	29.2	
Total Split (%)	25.1%	25.1%		33.1%	58.3%		41.7%	41.7%	41.7%	41.7%	41.7%	
Maximum Green (s)	10.9	10.9		19.2	34.1		22.5	22.5	22.5	22.5	22.5	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0		1.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		-2.1		1.0	-2.1			-2.4	-2.4		-2.4	
Total Lost Time (s)		4.6		5.0	4.6			4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	

Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		12.8		33.3	33.8			24.0	24.0		24.0	
Actuated g/C Ratio		0.19		0.50	0.51			0.36	0.36		0.36	
v/c Ratio		0.69		0.84	0.19			0.62	0.69		0.31	
Control Delay (s/veh)		40.2		29.1	6.0			23.6	6.3		16.9	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		40.2		29.1	6.0			23.6	6.3		16.9	
LOS		D		C	A			C	A		B	
Approach Delay (s/veh)		40.2			22.9			12.7			16.9	
Approach LOS		D			C			B			B	
Queue Length 50th (m)		26.4		33.8	5.3			38.5	0.0		14.8	
Queue Length 95th (m)		#42.2		#66.6	12.6			64.6	21.7		19.8	
Internal Link Dist (m)		810.8			178.8			887.9			140.9	
Turn Bay Length (m)												
Base Capacity (vph)		313		537	868			615	915		1027	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.68		0.77	0.17			0.59	0.68		0.30	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay (s/veh): 18.9

Intersection LOS: B

Intersection Capacity Utilization 77.6%

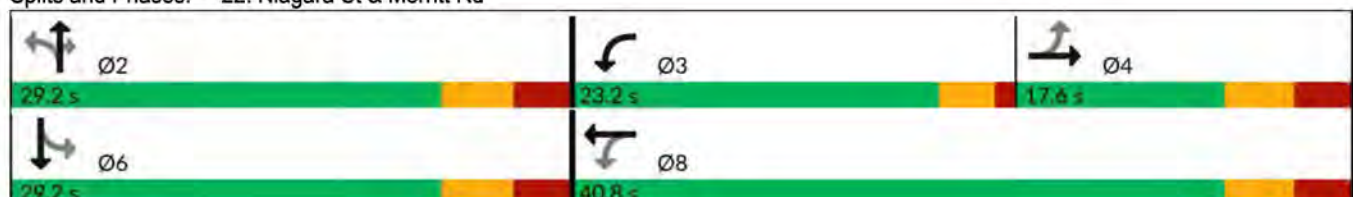
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 22: Niagara St & Merritt Rd



Lanes, Volumes, Timings

23: Clare Avenue/Line Avenue & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	198	26	54	144	11	20	44	138	55	55	11
Future Volume (vph)	22	198	26	54	144	11	20	44	138	55	55	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1666	0	0	1663	0	0	1563	0	0	1672	0
Flt Permitted		0.996			0.987			0.995			0.978	
Satd. Flow (perm)	0	1666	0	0	1663	0	0	1563	0	0	1672	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		404.5			351.0			378.6			1022.4	
Travel Time (s)		29.1			60.3			27.3			73.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	215	28	59	157	12	22	48	150	60	60	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	228	0	0	220	0	0	132	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.8%					ICU Level of Service A						
Analysis Period (min)	15											

HCM 7th AWSC
23: Clare Avenue/Line Avenue & Quaker Road

12-16-2024

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

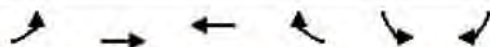
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	198	26	54	144	11	20	44	138	55	55	11
Future Vol, veh/h	22	198	26	54	144	11	20	44	138	55	55	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	24	215	28	59	157	12	22	48	150	60	60	12
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	11.5	11	10.3	10.1
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	9%	26%	45%
Vol Thru, %	22%	80%	69%	45%
Vol Right, %	68%	11%	5%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	246	209	121
LT Vol	20	22	54	55
Through Vol	44	198	144	55
RT Vol	138	26	11	11
Lane Flow Rate	220	267	227	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.308	0.386	0.335	0.205
Departure Headway (Hd)	5.051	5.191	5.313	5.61
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	711	693	677	639
Service Time	3.089	3.224	3.348	3.652
HCM Lane V/C Ratio	0.309	0.385	0.335	0.207
HCM Control Delay, s/veh	10.3	11.5	11	10.1
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.3	1.8	1.5	0.8

Lanes, Volumes, Timings
25: Quaker Road

12-16-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	722	454	6	18	16
Future Volume (vph)	6	722	454	6	18	16
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1697	1694	0	1581	0
Flt Permitted					0.974	
Satd. Flow (perm)	0	1697	1694	0	1581	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		188.6	76.8		55.5	
Travel Time (s)		13.6	5.5		4.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	7	785	493	7	20	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	792	500	0	37	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.4%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	722	454	6	18	16
Future Vol, veh/h	6	722	454	6	18	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	7	785	493	7	20	17
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	500	0	-	0	1295	497
Stage 1	-	-	-	-	497	-
Stage 2	-	-	-	-	798	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1075	-	-	-	181	577
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1075	-	-	-	179	577
Mov Cap-2 Maneuver	-	-	-	-	179	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	447	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.07	0		20.76		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	15	-	-	-	265	
HCM Lane V/C Ratio	0.006	-	-	-	0.139	
HCM Control Delay (s/veh)	8.4	0	-	-	20.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.5	

Lanes, Volumes, Timings

99: Quaker Road

12-16-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Volume (vph)	539	22	65	321	18	28
Future Volume (vph)	539	22	65	321	18	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1688	0	0	1683	1528	0
Flt Permitted				0.992	0.980	
Satd. Flow (perm)	1688	0	0	1683	1528	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	144.9			128.3	84.4	
Travel Time (s)	10.4			9.2	6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	586	24	71	349	20	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	610	0	0	420	50	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	67.8%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	539	22	65	321	18	28
Future Vol, veh/h	539	22	65	321	18	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	586	24	71	349	20	30

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	610
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	969
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	969
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.52	17.76
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	332	-	-	303	-
HCM Lane V/C Ratio	0.151	-	-	0.073	-
HCM Control Delay (s/veh)	17.8	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Lanes, Volumes, Timings

1: Clare Avenue

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	23	164	43	35	158
Future Volume (vph)	31	23	164	43	35	158
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1586	0	1682	0	0	1715
Flt Permitted	0.972					0.991
Satd. Flow (perm)	1586	0	1682	0	0	1715
Link Speed (k/h)	50		48			48
Link Distance (m)	139.9		634.5			378.6
Travel Time (s)	10.1		47.6			28.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	34	25	178	47	38	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	225	0	0	210
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 7th TWSC
1: Clare Avenue

12-16-2024

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	23	164	43	35	158
Future Vol, veh/h	31	23	164	43	35	158
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	34	25	178	47	38	172
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	449	202	0	0	225	0
Stage 1	202	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	571	844	-	-	1356	-
Stage 1	837	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	553	844	-	-	1356	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	11.1	0		1.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	649	326	-	
HCM Lane V/C Ratio	-	-	0.091	0.028	-	
HCM Control Delay (s/veh)	-	-	11.1	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

Lanes, Volumes, Timings

2: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	424	11	79	427	22	7	0	52	44	0	11
Future Volume (vph)	22	424	11	79	427	22	7	0	52	44	0	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1691	0	0	1681	0	0	1517	0	0	1620	0
Flt Permitted		0.998			0.993			0.994			0.962	
Satd. Flow (perm)	0	1691	0	0	1681	0	0	1517	0	0	1620	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		351.0			190.3			36.8			63.5	
Travel Time (s)		25.3			13.7			2.6			4.6	
Confl. Peds. (#/hr)	20		20									
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	461	12	86	464	24	8	0	57	48	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	497	0	0	574	0	0	65	0	0	60	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	75.2%						ICU Level of Service D					
Analysis Period (min)	15											

HCM 7th TWSC
2: Quaker Road

12-16-2024

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	424	11	79	427	22	7	0	52	44	0	11
Future Vol, veh/h	22	424	11	79	427	22	7	0	52	44	0	11
Conflicting Peds, #/hr	20	0	20	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	24	461	12	86	464	24	8	0	57	48	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	508	0	0	493	0	0	1171	1214	487	1177	1208	496
Stage 1	-	-	-	-	-	-	535	535	-	668	668	-
Stage 2	-	-	-	-	-	-	636	680	-	509	541	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1067	-	-	1081	-	-	171	183	585	170	185	578
Stage 1	-	-	-	-	-	-	533	527	-	451	460	-
Stage 2	-	-	-	-	-	-	470	454	-	551	524	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1049	-	-	1063	-	-	142	152	575	129	154	568
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	152	-	129	154	-
Stage 1	-	-	-	-	-	-	508	502	-	394	402	-
Stage 2	-	-	-	-	-	-	408	397	-	481	499	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.41			1.3			15.05			42.82		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	422	86	-	-	267	-	-	153
HCM Lane V/C Ratio	0.152	0.023	-	-	0.081	-	-	0.39
HCM Control Delay (s/veh)	15.1	8.5	0	-	8.7	0	-	42.8
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.3	-	-	1.7

Lanes, Volumes, Timings

3: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	506	8	53	523	22	5	0	38	1	0	1
Future Volume (vph)	5	506	8	53	523	22	5	0	38	1	0	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1694	0	0	1686	0	0	1515	0	0	1574	0
Fit Permitted					0.996			0.995			0.976	
Satd. Flow (perm)	0	1694	0	0	1686	0	0	1515	0	0	1574	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		190.3			295.7			54.2			58.9	
Travel Time (s)		13.7			21.3			3.9			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	550	9	58	568	24	5	0	41	1	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	564	0	0	650	0	0	46	0	0	2	0
Sign Control	FreeFreeStopStop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	77.6%				ICU Level of Service D							
Analysis Period (min)	15											

HCM 7th TWSC
3: Quaker Road

12-16-2024

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	506	8	53	523	22	5	0	38	1	0	1
Future Vol, veh/h	5	506	8	53	523	22	5	0	38	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	5	550	9	58	568	24	5	0	41	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	592	0	0	559	0	0	1249	1273	554	1257	1265	580
Stage 1	-	-	-	-	-	-	565	565	-	696	696	-
Stage 2	-	-	-	-	-	-	684	708	-	561	570	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	993	-	-	1022	-	-	151	169	536	149	171	518
Stage 1	-	-	-	-	-	-	513	511	-	435	446	-
Stage 2	-	-	-	-	-	-	442	441	-	516	509	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	993	-	-	1022	-	-	137	153	536	125	155	518
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	153	-	125	155	-
Stage 1	-	-	-	-	-	-	509	507	-	399	409	-
Stage 2	-	-	-	-	-	-	404	404	-	472	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.08		0.77	15.18	23.03
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	400	17	-	-	158	-	-	202
HCM Lane V/C Ratio	0.117	0.005	-	-	0.056	-	-	0.011
HCM Control Delay (s/veh)	15.2	8.6	0	-	8.7	0	-	23
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0

Lanes, Volumes, Timings

4: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	22	18	0	18	0	649	17	22	627	22
Future Volume (vph)	22	0	22	18	0	18	0	649	17	22	627	22
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1543	0	0	1574	0	0	1687	0	0	1680	0
Flt Permitted		0.976			0.976						0.998	
Satd. Flow (perm)	0	1543	0	0	1574	0	0	1687	0	0	1680	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		36.3			61.8			46.9			105.7	
Travel Time (s)		0.0			4.4			4.2			7.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	0	24	20	0	20	0	705	18	24	682	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	48	0	0	40	0	0	723	0	0	730	0
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	66.8%						ICU Level of Service C					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	22	0	22	18	0	18	0	649	17	22	627	22
Future Vol, veh/h	22	0	22	18	0	18	0	649	17	22	627	22
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	24	0	24	20	0	20	0	705	18	24	682	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1447	1465	693	1444	1468	715	705	0	0	724	0	0
Stage 1	741	741	-	715	715	-	-	-	-	-	-	-
Stage 2	705	724	-	729	753	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	109	128	443	111	128	434	893	-	-	888	-	-
Stage 1	408	423	-	425	435	-	-	-	-	-	-	-
Stage 2	427	430	-	417	417	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	100	122	443	100	122	434	893	-	-	888	-	-
Mov Cap-2 Maneuver	100	122	-	100	122	-	-	-	-	-	-	-
Stage 1	390	404	-	425	435	-	-	-	-	-	-	-
Stage 2	408	430	-	377	399	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v36.04		33.94	0	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	893	-	-	163	163	59	-
HCM Lane V/C Ratio	-	-	-	0.294	0.24	0.027	-
HCM Control Delay (s/veh)	0	-	-	36	33.9	9.2	0
HCM Lane LOS	A	-	-	E	D	A	A
HCM 95th %tile Q(veh)	0	-	-	1.2	0.9	0.1	-

Lanes, Volumes, Timings

5: Rice Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	666	0	0	668
Future Volume (vph)	0	0	666	0	0	668
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.3	3.3	3.3	3.3
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1731	0	1692	0	0	1692
Fit Permitted						
Satd. Flow (perm)	1731	0	1692	0	0	1692
Link Speed (k/h)	50		40			50
Link Distance (m)	47.0		212.0			46.9
Travel Time (s)	3.4		19.1			3.4
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	0	724	0	0	726
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	724	0	0	726
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	666	0	0	668
Future Vol, veh/h	0	0	666	0	0	668
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	724	0	0	726

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1450	724	0
Stage 1	724	-	-
Stage 2	726	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	146	429	888
Stage 1	484	-	-
Stage 2	483	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	146	429	888
Mov Cap-2 Maneuver	287	-	-
Stage 1	484	-	-
Stage 2	483	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	888	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s/veh)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Lanes, Volumes, Timings

6: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	3	22	41	3	39	0	563	54	41	577	50
Future Volume (vph)	64	3	22	41	3	39	0	563	54	41	577	50
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1583	0	0	1582	0	0	1671	0	0	1667	0
Fit Permitted		0.965			0.976						0.997	
Satd. Flow (perm)	0	1583	0	0	1582	0	0	1671	0	0	1667	0
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		32.8			98.9			148.6			212.0	
Travel Time (s)		0.0			7.1			13.4			15.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	70	3	24	45	3	42	0	612	59	45	627	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	97	0	0	90	0	0	671	0	0	726	0
Sign Control	Stop				Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	87.9%				ICU Level of Service E							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	3	22	41	3	39	0	563	54	41	577	50
Future Vol, veh/h	64	3	22	41	3	39	0	563	54	41	577	50
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	2	0	2	0	0	0	0	2
Mvmt Flow	70	3	24	45	3	42	0	612	59	45	627	54

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1357	1414	654	1359	1412	641	682	0	0	671	0	0
Stage 1	743	743	-	641	641	-	-	-	-	-	-	-
Stage 2	614	671	-	718	771	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.1	6.52	6.2	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	126	138	466	127	138	478	911	-	-	929	-	-
Stage 1	407	422	-	466	469	-	-	-	-	-	-	-
Stage 2	479	455	-	423	410	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	104	127	466	108	127	478	911	-	-	929	-	-
Mov Cap-2 Maneuver	104	127	-	108	127	-	-	-	-	-	-	-
Stage 1	375	389	-	466	469	-	-	-	-	-	-	-
Stage 2	434	455	-	367	378	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v88.58		47.05	0	0.56
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	911	-	-	129 172	109	-	-
HCM Lane V/C Ratio	-	-	-	0.749 0.525	0.048	-	-
HCM Control Delay (s/veh)	0	-	-	88.6 47.1	9.1	0	-
HCM Lane LOS	A	-	-	F E	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	4.3 2.6	0.2	-	-

Lanes, Volumes, Timings

7: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	43	13	0	2	58	505	22	5	512	12
Future Volume (vph)	7	0	43	13	0	2	58	505	22	5	512	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1491	0	0	1598	0	0	1642	0	0	1654	0
Flt Permitted		0.993			0.958			0.995				
Satd. Flow (perm)	0	1491	0	0	1598	0	0	1642	0	0	1654	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			81.2			232.4			190.6	
Travel Time (s)		4.7			0.0			16.7			13.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	8	0	47	14	0	2	63	549	24	5	557	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	16	0	0	636	0	0	575	0
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	78.0%				ICU Level of Service D							
Analysis Period (min)	15											

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	7	0	43	13	0	2	58	505	22	5	512	12
Future Vol, veh/h	7	0	43	13	0	2	58	505	22	5	512	12
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	47	14	0	2	63	549	24	5	557	13
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1249	1273	563	1254	1267	561	570	0	0	573	0	0
Stage 1	574	574	-	687	687	-	-	-	-	-	-	-
Stage 2	675	699	-	567	580	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	150	167	526	149	169	527	1003	-	-	1000	-	-
Stage 1	504	503	-	437	447	-	-	-	-	-	-	-
Stage 2	444	442	-	508	500	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	134	151	526	122	152	527	1003	-	-	1000	-	-
Mov Cap-2 Maneuver	134	151	-	122	152	-	-	-	-	-	-	-
Stage 1	500	499	-	397	406	-	-	-	-	-	-	-
Stage 2	401	401	-	459	496	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v16.28			35.1		0.88		0.08					
HCM LOS	C		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	177	-	-	373	136	17	-	-				
HCM Lane V/C Ratio	0.063	-	-	0.146	0.12	0.005	-	-				
HCM Control Delay (s/veh)	8.8	0	-	16.3	35.1	8.6	0	-				
HCM Lane LOS	A	A	-	C	E	A	A	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.4	0	-	-				

Lanes, Volumes, Timings

8: Rice Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	43	0	0	0	58	455	0	0	486	12
Future Volume (vph)	7	0	43	0	0	0	58	455	0	0	486	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.5	3.5	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1491	0	0	1697	0	0	1649	0	0	1654	0
Flt Permitted		0.993						0.994				
Satd. Flow (perm)	0	1491	0	0	1697	0	0	1649	0	0	1654	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		58.4			61.8			190.6			68.0	
Travel Time (s)		4.2			0.0			13.7			4.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	8	0	47	0	0	0	63	495	0	0	528	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	0	0	0	558	0	0	541	0
Sign Control	Stop				Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	71.4%				ICU Level of Service C							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	43	0	0	0	58	455	0	0	486	12
Future Vol, veh/h	7	0	43	0	0	0	58	455	0	0	486	12
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	47	0	0	0	63	495	0	0	528	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1155	1155	535	1149	1162	495	541	0	0	495	0	0
Stage 1	535	535	-	621	621	-	-	-	-	-	-	-
Stage 2	621	621	-	528	541	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	174	197	545	176	195	575	1027	-	-	1069	-	-
Stage 1	529	524	-	475	479	-	-	-	-	-	-	-
Stage 2	475	479	-	534	521	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	159	180	545	147	178	575	1027	-	-	1069	-	-
Mov Cap-2 Maneuver	159	180	-	147	178	-	-	-	-	-	-	-
Stage 1	529	524	-	435	439	-	-	-	-	-	-	-
Stage 2	435	439	-	488	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.2	0	0.99	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	407	-	-	-
HCM Lane V/C Ratio	0.061	-	-	0.134	-	-	-
HCM Control Delay (s/veh)	8.7	0	-	15.2	0	0	-
HCM Lane LOS	A	A	-	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	-	0	-

Lanes, Volumes, Timings

9: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	476	44	70	526	11	38	0	51	7	0	9
Future Volume (vph)	15	476	44	70	526	11	38	0	51	7	0	9
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.7		45.7	45.7		45.7	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1680	0	0	1687	0	0	1564	0	0	1566	0
Flt Permitted		0.999			0.994			0.979			0.978	
Satd. Flow (perm)	0	1680	0	0	1687	0	0	1564	0	0	1566	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		326.4			220.0			48.8			221.2	
Travel Time (s)		23.5			35.5			0.0			0.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	517	48	76	572	12	41	0	55	8	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	581	0	0	660	0	0	96	0	0	18	0
Sign Control	Free Free Stop Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	81.2%				ICU Level of Service D							
Analysis Period (min)	15											

HCM 7th TWSC
9: Quaker Road

12-16-2024

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	476	44	70	526	11	38	0	51	7	0	9
Future Vol, veh/h	15	476	44	70	526	11	38	0	51	7	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	16	517	48	76	572	12	41	0	55	8	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	0	565	0	0	1298	1310	541	1280	1328	578
Stage 1	-	-	-	-	-	-	574	574	-	730	730	-
Stage 2	-	-	-	-	-	-	724	736	-	550	598	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1001	-	-	1017	-	-	140	161	545	144	157	520
Stage 1	-	-	-	-	-	-	508	507	-	417	431	-
Stage 2	-	-	-	-	-	-	420	428	-	523	494	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1001	-	-	1017	-	-	119	139	545	112	136	520
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	139	-	112	136	-
Stage 1	-	-	-	-	-	-	495	494	-	371	383	-
Stage 2	-	-	-	-	-	-	367	381	-	458	482	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.24		1.02	34.56	24.62
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	50	-	-	207	-	-	201
HCM Lane V/C Ratio	0.448	0.016	-	-	0.075	-	-	0.087
HCM Control Delay (s/veh)	34.6	8.7	0	-	8.8	0	-	24.6
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.1	0	-	-	0.2	-	-	0.3

Lanes, Volumes, Timings
10: Quaker Road

12-16-2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↗	↘
Traffic Volume (vph)	525	8	50	602	5	30
Future Volume (vph)	525	8	50	602	5	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		0	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1694	0	0	1721	1513	0
Flt Permitted				0.996	0.993	
Satd. Flow (perm)	1694	0	0	1721	1513	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	220.0			142.9	102.8	
Travel Time (s)	15.8			19.7	7.4	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	571	9	54	654	5	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	580	0	0	708	38	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	81.3%			ICU Level of Service D		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	525	8	50	602	5	30
Future Vol, veh/h	525	8	50	602	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	0	2	0
Mvmt Flow	571	9	54	654	5	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	579
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	994
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	994
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.68	15.25
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	389	-	-	138	-
HCM Lane V/C Ratio	0.098	-	-	0.055	-
HCM Control Delay (s/veh)	15.3	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Lanes, Volumes, Timings

11: First Avenue

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	0	60	22	0	22	57	557	0	22	469	56
Future Volume (vph)	42	0	60	22	0	22	57	557	0	22	469	56
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1544	0	0	1574	0	0	1722	0	0	1703	0
Flt Permitted		0.980			0.976			0.995			0.998	
Satd. Flow (perm)	0	1544	0	0	1574	0	0	1722	0	0	1703	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		91.1			108.9			108.6			221.2	
Travel Time (s)		6.6			7.8			7.8			15.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	46	0	65	24	0	24	62	605	0	24	510	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	48	0	0	667	0	0	595	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	70.7%						ICU Level of Service C					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	42	0	60	22	0	22	57	557	0	22	469	56
Future Vol, veh/h	42	0	60	22	0	22	57	557	0	22	469	56
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	46	0	65	24	0	24	62	605	0	24	510	61

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1317	1317	540	1287	1348	605	571	0	0	605	0	0
Stage 1	588	588	-	729	729	-	-	-	-	-	-	-
Stage 2	729	729	-	558	618	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.22	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.318	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	136	159	542	142	152	501	1012	-	-	982	-	-
Stage 1	499	499	-	417	431	-	-	-	-	-	-	-
Stage 2	417	431	-	518	484	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	113	139	542	110	133	501	1012	-	-	982	-	-
Mov Cap-2 Maneuver	113	139	-	110	133	-	-	-	-	-	-	-
Stage 1	481	481	-	379	391	-	-	-	-	-	-	-
Stage 2	361	391	-	439	466	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v39.35		32.1	0.82	0.35
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	167	-	-	212	180	71	-
HCM Lane V/C Ratio	0.061	-	-	0.524	0.266	0.024	-
HCM Control Delay (s/veh)	8.8	0	-	39.3	32.1	8.8	0
HCM Lane LOS	A	A	-	E	D	A	A
HCM 95th %tile Q(veh)	0.2	-	-	2.7	1	0.1	-

Lanes, Volumes, Timings

12: Cataract Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	8	535	44	16	447
Future Volume (vph)	27	8	535	44	16	447
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1613	0	1713	0	0	1726
Flt Permitted	0.963					0.998
Satd. Flow (perm)	1613	0	1713	0	0	1726
Link Speed (k/h)	50		50			50
Link Distance (m)	65.2		119.8			70.9
Travel Time (s)	4.7		8.6			5.1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	9	582	48	17	486
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	630	0	0	503
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	8	535	44	16	447
Future Vol, veh/h	27	8	535	44	16	447
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	2	0
Mvmt Flow	29	9	582	48	17	486

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1126	605	0
Stage 1	605	-	-
Stage 2	521	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	229	501	-
Stage 1	549	-	-
Stage 2	600	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	223	501	-
Mov Cap-2 Maneuver	223	-	-
Stage 1	549	-	-
Stage 2	585	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	21.56	0	0.31
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	255	62
HCM Lane V/C Ratio	-	-	0.149	0.018
HCM Control Delay (s/veh)	-	-	21.6	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Lanes, Volumes, Timings

13: Cataract Road

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	8	499	44	16	436
Future Volume (vph)	27	8	499	44	16	436
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1613	0	1712	0	0	1727
Flt Permitted	0.963					0.998
Satd. Flow (perm)	1613	0	1712	0	0	1727
Link Speed (k/h)	50		50			50
Link Distance (m)	51.9		70.9			111.7
Travel Time (s)	3.7		5.1			8.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	9	542	48	17	474
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	590	0	0	491
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	8	499	44	16	436
Future Vol, veh/h	27	8	499	44	16	436
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	29	9	542	48	17	474

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1075	566	0
Stage 1	566	-	-
Stage 2	509	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	245	527	-
Stage 1	572	-	-
Stage 2	608	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	239	527	-
Mov Cap-2 Maneuver	239	-	-
Stage 1	572	-	-
Stage 2	593	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v20.27		0	0.31
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	274	64
HCM Lane V/C Ratio	-	-	0.139	0.017
HCM Control Delay (s/veh)	-	-	20.3	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

Lanes, Volumes, Timings
14: Cataract Road & Street 'D'

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	15	442	65	27	409
Future Volume (vph)	43	15	442	65	27	409
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	45.7	45.7		45.7	45.7	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1612	0	1701	0	0	1725
Flt Permitted	0.964					0.997
Satd. Flow (perm)	1612	0	1701	0	0	1725
Link Speed (k/h)	48		50			50
Link Distance (m)	162.3		111.7			177.0
Travel Time (s)	41.4		26.6			10.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	47	16	480	71	29	445
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	551	0	0	474
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	57.7%			ICU Level of Service B		
Analysis Period (min)	15					

HCM 7th TWSC
14: Cataract Road & Street 'D'

12-16-2024

Intersection

Int Delay, s/veh 1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	15	442	65	27	409
Future Vol, veh/h	43	15	442	65	27	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	47	16	480	71	29	445

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1019	516	0
Stage 1	516	-	-
Stage 2	503	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	265	563	-
Stage 1	603	-	-
Stage 2	611	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	255	563	-
Mov Cap-2 Maneuver	255	-	-
Stage 1	603	-	-
Stage 2	588	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v20.37		0	0.53
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	111
HCM Lane V/C Ratio	-	-	0.212	0.029
HCM Control Delay (s/veh)	-	-	20.4	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1

Lanes, Volumes, Timings

15: First Avenue

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	0	131	25	0	8	183	234	40	15	280	77
Future Volume (vph)	49	0	131	25	0	8	183	234	40	15	280	77
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1541	0	0	1612	0	0	1676	0	0	1679	0
Flt Permitted		0.987			0.964			0.980			0.998	
Satd. Flow (perm)	0	1541	0	0	1612	0	0	1676	0	0	1679	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		135.4			80.3			177.0			566.2	
Travel Time (s)		9.7			0.0			12.7			39.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	53	0	142	27	0	9	199	254	43	16	304	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	195	0	0	36	0	0	496	0	0	404	0
Sign Control	Stop				Stop		Free				Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	70.3%				ICU Level of Service C							
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	49	0	131	25	0	8	183	234	40	15	280	77
Future Vol, veh/h	49	0	131	25	0	8	183	234	40	15	280	77
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	0	142	27	0	9	199	254	43	16	304	84

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1031	1074	346	1011	1095	276	388	0	0	298	0	0
Stage 1	379	379	-	674	674	-	-	-	-	-	-	-
Stage 2	652	696	-	337	421	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	213	222	701	220	216	768	1181	-	-	1275	-	-
Stage 1	647	618	-	448	457	-	-	-	-	-	-	-
Stage 2	460	446	-	682	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	165	174	701	137	169	768	1181	-	-	1275	-	-
Mov Cap-2 Maneuver	165	174	-	137	169	-	-	-	-	-	-	-
Stage 1	636	608	-	357	364	-	-	-	-	-	-	-
Stage 2	362	356	-	534	583	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v24.88		31.44	3.47	0.32
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	700	-	-	372	172	70	-
HCM Lane V/C Ratio	0.168	-	-	0.525	0.209	0.013	-
HCM Control Delay (s/veh)	8.7	0	-	24.9	31.4	7.9	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.6	-	-	2.9	0.8	0	-

Lanes, Volumes, Timings

16: Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	719	22	22	822	16	22	0	22	10	0	20
Future Volume (vph)	28	719	22	22	822	16	22	0	22	10	0	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1688	0	0	1692	0	0	1543	0	0	1550	0
Flt Permitted		0.998			0.999			0.976			0.984	
Satd. Flow (perm)	0	1688	0	0	1692	0	0	1543	0	0	1550	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		262.7			188.6			68.3			81.3	
Travel Time (s)		18.9			13.6			0.0			5.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	30	782	24	24	893	17	24	0	24	11	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	836	0	0	934	0	0	48	0	0	33	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 68.4%	ICU Level of Service C											
Analysis Period (min) 15												

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	719	22	22	822	16	22	0	22	10	0	20
Future Vol, veh/h	28	719	22	22	822	16	22	0	22	10	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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	2	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	30	782	24	24	893	17	24	0	24	11	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	911	0	0	805	0	0	1796	1813	793	1792	1816	902
Stage 1	-	-	-	-	-	-	854	854	-	950	950	-
Stage 2	-	-	-	-	-	-	941	959	-	842	866	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	756	-	-	819	-	-	62	78	388	63	78	339
Stage 1	-	-	-	-	-	-	353	375	-	315	339	-
Stage 2	-	-	-	-	-	-	316	336	-	361	370	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	756	-	-	819	-	-	51	68	388	52	68	339
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	68	-	52	68	-
Stage 1	-	-	-	-	-	-	327	348	-	296	319	-
Stage 2	-	-	-	-	-	-	278	316	-	314	343	-

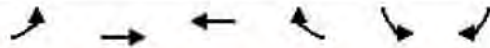
Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.36		0.24	83.58	46.26
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	90	65	-	-	46	-	-	119
HCM Lane V/C Ratio	0.532	0.04	-	-	0.029	-	-	0.274
HCM Control Delay (s/veh)	83.6	10	0	-	9.5	0	-	46.3
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.4	0.1	-	-	0.1	-	-	1

Lanes, Volumes, Timings

17: Quaker Road

12-16-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (vph)	16	726	853	22	15	12
Future Volume (vph)	16	726	853	22	15	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1696	1692	0	1564	0
Flt Permitted		0.999			0.973	
Satd. Flow (perm)	0	1696	1692	0	1564	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		76.8	297.6		65.7	
Travel Time (s)		5.5	21.4		4.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	17	789	927	24	16	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	806	951	0	29	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	726	853	22	15	12
Future Vol, veh/h	16	726	853	22	15	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	0
Mvmt Flow	17	789	927	24	16	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	951	0	0 1763 939
Stage 1	-	-	- 939 -
Stage 2	-	-	- 824 -
Critical Hdwy	4.1	-	- 6.42 6.2
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.2	-	- 3.518 3.3
Pot Cap-1 Maneuver	730	-	- 93 323
Stage 1	-	-	- 380 -
Stage 2	-	-	- 431 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	730	-	- 89 323
Mov Cap-2 Maneuver	-	-	- 89 -
Stage 1	-	-	- 364 -
Stage 2	-	-	- 431 -

Approach	EB	WB	SB
HCM Control Delay, s/v	0.22	0	40.32
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	39	-	-	-	131
HCM Lane V/C Ratio	0.024	-	-	-	0.224
HCM Control Delay (s/veh)	10	0	-	-	40.3
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	141	118	45	164	136	117	295	40	159	353	68
Future Volume (vph)	23	141	118	45	164	136	117	295	40	159	353	68
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	60.0		0.0	60.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1595	0	0	1581	0	1612	1662	0	1612	1656	0
Flt Permitted		0.950			0.921		0.377			0.474		
Satd. Flow (perm)	0	1521	0	0	1465	0	640	1662	0	804	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			64			13			19	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		252.0			404.5			1006.2			780.9	
Travel Time (s)		18.1			29.1			72.4			56.2	
Confl. Peds. (#/hr)	4					4			1	1		
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	153	128	49	178	148	127	321	43	173	384	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	306	0	0	375	0	127	364	0	173	458	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.3	32.3		32.3	32.3		32.3	32.3		32.3	32.3	
Total Split (s)	32.3	32.3		32.3	32.3		32.7	32.7		32.7	32.7	
Total Split (%)	49.7%	49.7%		49.7%	49.7%		50.3%	50.3%		50.3%	50.3%	
Maximum Green (s)	26.0	26.0		26.0	26.0		26.4	26.4		26.4	26.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		-2.5			-2.5		-2.3	-2.3		-2.3	-2.3	
Total Lost Time (s)		3.8			3.8		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings
18: Pelham St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		19.0	19.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		4	4		1	1		0	0	
Act Effct Green (s)		18.2			18.2		19.8	19.8		19.8	19.8	
Actuated g/C Ratio		0.39			0.39		0.43	0.43		0.43	0.43	
v/c Ratio		0.48			0.61		0.47	0.51		0.50	0.64	
Control Delay (s/veh)		11.5			14.9		17.8	13.2		17.3	15.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		11.5			14.9		17.8	13.2		17.3	15.7	
LOS		B			B		B	B		B	B	
Approach Delay (s/veh)		11.5			14.9			14.4			16.1	
Approach LOS		B			B			B			B	
Queue Length 50th (m)		12.2			17.3		6.4	18.0		9.0	24.3	
Queue Length 95th (m)		35.7			49.0		24.5	49.4		30.9	65.8	
Internal Link Dist (m)		228.0			380.5			982.2			756.9	
Turn Bay Length (m)							60.0			60.0		
Base Capacity (vph)		1030			990		426	1111		535	1109	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.30			0.38		0.30	0.33		0.32	0.41	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 46.4

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay (s/veh): 14.6

Intersection LOS: B

Intersection Capacity Utilization 75.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 18: Pelham St & Quaker Road



Lanes, Volumes, Timings
19: Rice Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	312	117	149	342	87	170	377	142	81	405	85
Future Volume (vph)	120	312	117	149	342	87	170	377	142	81	405	85
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.3	3.3	3.3
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1636	0	1644	1651	0	1607	1622	0	1607	1648	0
Flt Permitted	0.344			0.345			0.311			0.278		
Satd. Flow (perm)	595	1636	0	597	1651	0	526	1622	0	470	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			21			39			22	
Link Speed (k/h)		50			50			40			50	
Link Distance (m)		295.7			326.4			105.7			232.4	
Travel Time (s)		21.3			23.5			9.5			16.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	130	339	127	162	372	95	185	410	154	88	440	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	466	0	162	467	0	185	564	0	88	532	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		26.3	26.3		24.3	24.3		24.3	24.3	
Total Split (s)	28.0	28.0		28.0	28.0		37.0	37.0		37.0	37.0	
Total Split (%)	43.1%	43.1%		43.1%	43.1%		56.9%	56.9%		56.9%	56.9%	
Maximum Green (s)	21.7	21.7		21.7	21.7		30.7	30.7		30.7	30.7	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		6.3	6.3		6.3	6.3		6.3	6.3	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings
19: Rice Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)	21.8	21.8		21.8	21.8		24.4	24.4		24.4	24.4	
Actuated g/C Ratio	0.37	0.37		0.37	0.37		0.41	0.41		0.41	0.41	
v/c Ratio	0.59	0.75		0.74	0.75		0.85	0.81		0.45	0.77	
Control Delay (s/veh)	32.6	26.7		43.4	27.2		51.3	24.4		20.6	22.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	32.6	26.7		43.4	27.2		51.3	24.4		20.6	22.1	
LOS	C	C		D	C		D	C		C	C	
Approach Delay (s/veh)		28.0			31.4			31.1			21.9	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	11.9	43.2		16.0	44.3		17.1	47.4		6.5	44.6	
Queue Length 95th (m)	#37.0	#94.2		#48.0	#95.9		#49.7	82.3		17.9	76.0	
Internal Link Dist (m)		271.7			302.4			81.7			208.4	
Turn Bay Length (m)	30.0			30.0			50.0			50.0		
Base Capacity (vph)	222	630		222	629		277	875		247	880	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.59	0.74		0.73	0.74		0.67	0.64		0.36	0.60	

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 59

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.85

Intersection Signal Delay (s/veh): 28.2

Intersection LOS: C

Intersection Capacity Utilization 102.5%

ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 19: Rice Road & Quaker Road



Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	442	50	185	340	139	46	350	226	101	313	260
Future Volume (vph)	90	442	50	185	340	139	46	350	226	101	313	260
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	30.0		0.0	30.0		0.0	40.0		45.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1644	1674	0	1644	1633	0	1644	1628	0	1644	1613	0
Flt Permitted	0.447			0.141			0.163			0.160		
Satd. Flow (perm)	774	1674	0	244	1633	0	282	1628	0	277	1613	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			30			43			55	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		130.3			262.7			221.2			119.8	
Travel Time (s)		9.4			18.9			15.9			8.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	98	480	54	201	370	151	50	380	246	110	340	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	534	0	201	521	0	50	626	0	110	623	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		7.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.3	26.3		11.1	26.3		26.1	26.1		24.3	24.3	
Total Split (s)	35.7	35.7		12.0	47.7		42.3	42.3		42.3	42.3	
Total Split (%)	39.7%	39.7%		13.3%	53.0%		47.0%	47.0%		47.0%	47.0%	
Maximum Green (s)	29.4	29.4		8.0	41.4		36.0	36.0		36.0	36.0	
Yellow Time (s)	3.3	3.3		3.0	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	3.0	3.0		1.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.3	6.3		4.0	6.3		6.3	6.3		6.3	6.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings

20: First Avenue/Cataract Road & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effect Green (s)	29.4	29.4		43.7	41.4		36.0	36.0		36.0	36.0	
Actuated g/C Ratio	0.33	0.33		0.49	0.46		0.40	0.40		0.40	0.40	
v/c Ratio	0.39	0.97		0.83	0.68		0.45	0.92		1.00	0.92	
Control Delay (s/veh)	29.0	62.8		44.2	23.4		35.1	46.0		118.9	44.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	29.0	62.8		44.2	23.4		35.1	46.0		118.9	44.5	
LOS	C	E		D	C		D	D		F	D	
Approach Delay (s/veh)		57.6			29.2			45.2			55.7	
Approach LOS		E			C			D			E	
Queue Length 50th (m)	12.9	89.1		19.5	64.3		6.2	95.2		18.5	92.7	
Queue Length 95th (m)	27.2	#153.4		#52.2	100.1		18.8	#162.7		#51.5	#160.3	
Internal Link Dist (m)		106.3			238.7			197.2			95.8	
Turn Bay Length (m)	30.0			30.0			40.0			30.0		
Base Capacity (vph)	252	551		242	767		112	677		110	678	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.97		0.83	0.68		0.45	0.92		1.00	0.92	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 46.6

Intersection LOS: D

Intersection Capacity Utilization 109.8%

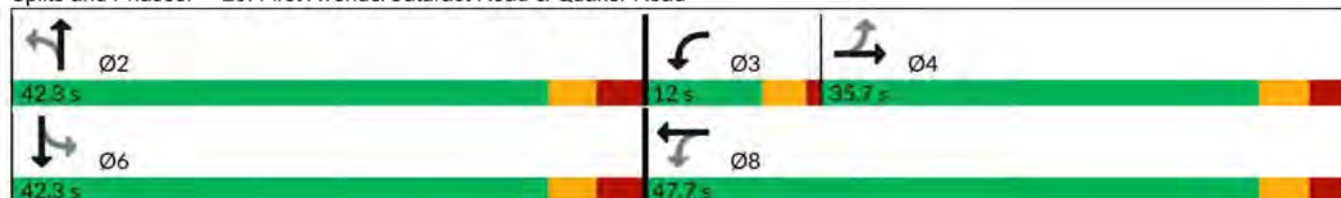
ICU Level of Service H

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 20: First Avenue/Cataract Road & Quaker Road



Lanes, Volumes, Timings
21: Niagara St & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	49	282	45	31	20	381	510	62	39	717	405
Future Volume (vph)	326	49	282	45	31	20	381	510	62	39	717	405
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		65.0	0.0		22.5	75.0		0.0	22.5		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1612	1461	0	1612	1586	0	1612	3172	0	1612	3022	0
Flt Permitted	0.637			0.336			0.950			0.950		
Satd. Flow (perm)	1080	1461	0	569	1586	0	1610	3172	0	1612	3022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208			21			10			99	
Link Speed (k/h)		50			50			50			60	
Link Distance (m)		297.6			214.3			467.2			109.3	
Travel Time (s)		21.4			15.4			33.6			6.6	
Confl. Peds. (#/hr)	1		2	2		1	2					2
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.70	0.70	0.70	0.96	0.96	0.96	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	370	56	320	64	44	29	397	531	65	42	779	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	370	376	0	64	73	0	397	596	0	42	1219	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases	7	4			8		2	2		6	6	
Permitted Phases	4			8								
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	11.1	37.7		37.7	37.7		31.7	31.7		31.7	31.7	
Total Split (s)	15.0	35.0		20.0	20.0		40.0	40.0		55.0	55.0	
Total Split (%)	11.5%	26.9%		15.4%	15.4%		30.8%	30.8%		42.3%	42.3%	
Maximum Green (s)	11.0	28.3		13.3	13.3		33.3	33.3		48.3	48.3	
Yellow Time (s)	3.0	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	-2.9	-2.9		-2.9	-2.9		1.0	-2.6		1.0	-2.6	
Total Lost Time (s)	1.1	3.8		3.8	3.8		7.7	4.1		7.7	4.1	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	2.5		2.5	2.5		2.5	2.5		2.5	2.5	

Lanes, Volumes, Timings

21: Niagara St & Quaker Road

12-16-2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		24.0		24.0	24.0		18.0	18.0		18.0	18.0	
Pedestrian Calls (#/hr)		5		5	5		5	5		5	5	
Act Effect Green (s)	37.2	34.5		19.4	19.4		32.4	36.0		47.4	51.0	
Actuated g/C Ratio	0.28	0.26		0.15	0.15		0.24	0.27		0.36	0.38	
v/c Ratio	1.04	0.71		0.78	0.29		1.02	0.69		0.07	1.00	
Control Delay (s/veh)	103.5	27.0		106.9	39.2		99.6	48.7		30.8	64.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	103.5	27.0		106.9	39.2		99.6	48.7		30.8	64.3	
LOS	F	C		F	D		F	D		C	E	
Approach Delay (s/veh)		64.9			70.8			69.1			63.2	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	~101.9	40.8		16.4	12.2		102.0	70.5		7.0	151.4	
Queue Length 95th (m)	#138.2	71.4		24.3	18.7		#198.3	106.9		18.1	#245.9	
Internal Link Dist (m)		273.6			190.3			443.2			85.3	
Turn Bay Length (m)							75.0			22.5		
Base Capacity (vph)	356	531		82	249		390	862		572	1216	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.04	0.71		0.78	0.29		1.02	0.69		0.07	1.00	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 133.5

Natural Cycle: 145

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.04

Intersection Signal Delay (s/veh): 65.8

Intersection LOS: E

Intersection Capacity Utilization 102.6%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 21: Niagara St & Quaker Road



Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	90	3	683	165	35	2	312	542	48	491	21
Future Volume (vph)	2	90	3	683	165	35	2	312	542	48	491	21
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		60.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1640	0	1566	1605	0	0	1648	1401	0	3100	0
Flt Permitted		0.990		0.288				0.997			0.772	
Satd. Flow (perm)	0	1625	0	475	1605	0	0	1643	1401	0	2403	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			19				596			4
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		832.7			202.8			911.9			164.9	
Travel Time (s)		60.0			12.2			54.7			9.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.68	0.68	0.68	0.94	0.94	0.94	0.91	0.91	0.91	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	132	4	727	176	37	2	343	596	55	564	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	727	213	0	0	345	596	0	643	0
Number of Detectors	1	1		1	1		1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	12.0	12.0		12.0	12.0		12.0	12.0	6.1	12.0	12.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	10.0		20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	16.7	16.7		16.7	16.7		26.7	26.7	26.7	26.7	26.7	
Total Split (s)	19.0	19.0		46.0	65.0		35.0	35.0	35.0	35.0	35.0	
Total Split (%)	19.0%	19.0%		46.0%	65.0%		35.0%	35.0%	35.0%	35.0%	35.0%	
Maximum Green (s)	12.3	12.3		42.0	58.3		28.3	28.3	28.3	28.3	28.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.0	3.0		1.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		-2.1		1.0	-2.1			-2.4	-2.4		-2.4	
Total Lost Time (s)		4.6		5.0	4.6			4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		5.0	5.0	5.0	5.0	5.0	

Lanes, Volumes, Timings
22: Niagara St & Merritt Rd

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		13.7		59.2	59.6			30.3	30.3		30.3	
Actuated g/C Ratio		0.14		0.60	0.60			0.31	0.31		0.31	
v/c Ratio		0.62		0.99	0.22			0.69	0.71		0.87	
Control Delay (s/veh)		52.5		52.3	8.8			38.5	7.6		46.6	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		52.5		52.3	8.8			38.5	7.6		46.6	
LOS		D		D	A			D	A		D	
Approach Delay (s/veh)		52.5			42.5			18.9			46.6	
Approach LOS		D			D			B			D	
Queue Length 50th (m)		25.3		116.4	15.7			58.4	0.0		61.3	
Queue Length 95th (m)		32.3		#196.4	26.5			89.3	29.1		#86.6	
Internal Link Dist (m)		808.7			178.8			887.9			140.9	
Turn Bay Length (m)												
Base Capacity (vph)		237		737	988			510	846		749	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.59		0.99	0.22			0.68	0.70		0.86	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 98.8

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 35.7

Intersection LOS: D

Intersection Capacity Utilization 93.7%

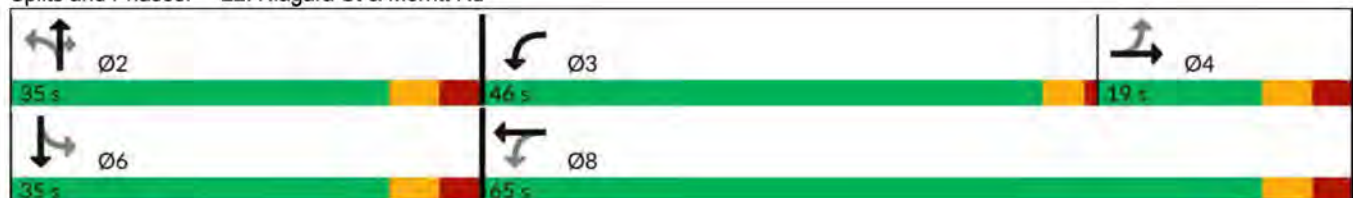
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 22: Niagara St & Merritt Rd



Lanes, Volumes, Timings

23: Clare Avenue/Line Avenue & Quaker Road

12-16-2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	276	33	106	286	55	18	44	126	55	55	11
Future Volume (vph)	22	276	33	106	286	55	18	44	126	55	55	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	0	1668	0	0	1648	0	0	1567	0	0	1672	0
Flt Permitted		0.997			0.988			0.995			0.978	
Satd. Flow (perm)	0	1668	0	0	1648	0	0	1567	0	0	1672	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		404.5			351.0			378.6			1022.4	
Travel Time (s)		29.1			60.3			27.3			73.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	300	36	115	311	60	20	48	137	60	60	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	0	486	0	0	205	0	0	132	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	77.6%						ICU Level of Service D					
Analysis Period (min)	15											

HCM 7th AWSC
23: Clare Avenue/Line Avenue & Quaker Road

12-16-2024

Intersection

Intersection Delay, s/veh	19.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	276	33	106	286	55	18	44	126	55	55	11
Future Vol, veh/h	22	276	33	106	286	55	18	44	126	55	55	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
Heavy Vehicles, %	2	2	2	2	2	2	0	0	0	0	0	0
Mvmt Flow	24	300	36	115	311	60	20	48	137	60	60	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

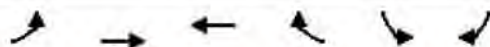
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17	25.6	12.8	12.3
HCM LOS	C	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	7%	24%	45%
Vol Thru, %	23%	83%	64%	45%
Vol Right, %	67%	10%	12%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	188	331	447	121
LT Vol	18	22	106	55
Through Vol	44	276	286	55
RT Vol	126	33	55	11
Lane Flow Rate	204	360	486	132
Geometry Grp	1	1	1	1
Degree of Util (X)	0.356	0.588	0.774	0.252
Departure Headway (Hd)	6.273	5.885	5.734	6.89
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	572	612	636	520
Service Time	4.332	3.933	3.734	4.956
HCM Lane V/C Ratio	0.357	0.588	0.764	0.254
HCM Control Delay, s/veh	12.8	17	25.6	12.3
HCM Lane LOS	B	C	D	B
HCM 95th-tile Q	1.6	3.8	7.3	1

Lanes, Volumes, Timings

25: Quaker Road

12-16-2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Volume (vph)	17	696	811	16	9	11
Future Volume (vph)	17	696	811	16	9	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	0	1696	1692	0	1567	0
Flt Permitted		0.999			0.978	
Satd. Flow (perm)	0	1696	1692	0	1567	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		188.6	76.8		55.5	
Travel Time (s)		13.6	5.5		4.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	18	757	882	17	10	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	775	899	0	22	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

HCM 7th TWSC
25: Quaker Road

12-16-2024

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	696	811	16	9	11
Future Vol, veh/h	17	696	811	16	9	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	18	757	882	17	10	12
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	899	0	-	0	1684	890
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	793	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	764	-	-	-	105	344
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	449	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	764	-	-	-	100	344
Mov Cap-2 Maneuver	-	-	-	-	100	-
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	449	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.23	0		30.18		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	43	-	-	-	165	
HCM Lane V/C Ratio	0.024	-	-	-	0.132	
HCM Control Delay (s/veh)	9.8	0	-	-	30.2	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	

Lanes, Volumes, Timings

29: Quaker Road

12-16-2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	0.0		0.0	0.0
Storage Lanes		0	0		1	0
Taper Length (m)			7.5		7.5	
Satd. Flow (prot)	1697	0	0	1697	1697	0
Flt Permitted						
Satd. Flow (perm)	1697	0	0	1697	1697	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	142.9			130.3	63.5	
Travel Time (s)	10.3			9.4	4.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1020	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1020	1083
Mov Cap-2 Maneuver	-	-	-	-	1020	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1622	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Lanes, Volumes, Timings
102: First Avenue & Merritt Rd

12-16-2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	95	0	41	63	0	85
Future Volume (vph)	95	0	41	63	0	85
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	0.0	
Storage Lanes	0	0		0	0	
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1612	0	1559	0	0	1697
Flt Permitted	0.950					
Satd. Flow (perm)	1612	0	1559	0	0	1697
Link Speed (k/h)	50		50			50
Link Distance (m)	832.7		566.2			139.5
Travel Time (s)	60.0		40.8			10.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	103	0	45	68	0	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	0	113	0	0	92
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	0	41	63	0	85
Future Vol, veh/h	95	0	41	63	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	0	45	68	0	92

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	171	79	0
Stage 1	79	-	-
Stage 2	92	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	819	982	-
Stage 1	944	-	-
Stage 2	931	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	819	982	-
Mov Cap-2 Maneuver	819	-	-
Stage 1	944	-	-
Stage 2	931	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v10.03		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	819	1476
HCM Lane V/C Ratio	-	-	0.126	-
HCM Control Delay (s/veh)	-	-	10	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0