

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	0	2	1061	354	76
Future Volume (Veh/h)	101	0	2	1061	354	76
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.83	0.83
Hourly flow rate (vph)	116	0	2	1094	427	92
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1571	473	519			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1571	473	519			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	5	100	100			
cM capacity (veh/h)	123	595	1057			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	116	1096	519			
Volume Left	116	2	0			
Volume Right	0	0	92			
cSH	123	1057	1700			
Volume to Capacity	0.95	0.00	0.31			
Queue Length 95th (ft)	155	0	0			
Control Delay (s)	134.5	0.1	0.0			
Lane LOS	F	A				
Approach Delay (s)	134.5	0.1	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			9.1			
Intersection Capacity Utilization			69.7%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Court St/Hollis St & Main St

2023 No-Build
Monday Afternoon Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	4	1019	256	22	450	3	0	0	0	60	0	23
Future Volume (Veh/h)	4	1019	256	22	450	3	0	0	0	60	0	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	4	1132	284	24	489	3	0	0	0	67	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	492			1416			1846	1962	490	1820	1822	1274
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492			1416			1846	1962	490	1820	1822	1274
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			100	100	100	0	100	87
cM capacity (veh/h)	1082			487			49	61	582	57	74	206
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	1420	516	93									
Volume Left	4	24	67									
Volume Right	284	3	26									
cSH	1082	487	72									
Volume to Capacity	0.00	0.05	1.30									
Queue Length 95th (ft)	0	4	185									
Control Delay (s)	0.2	1.4	307.4									
Lane LOS	A	A	F									
Approach Delay (s)	0.2	1.4	307.4									
Approach LOS			F									
Intersection Summary												
Average Delay			14.6									
Intersection Capacity Utilization			82.0%	ICU Level of Service						D		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	18	26	192	143	383	31	43	1109	46	
Future Volume (Veh/h)	0	0	0	18	26	192	143	383	31	43	1109	46	
Sign Control		Stop			Stop			Free				Free	
Grade		0%			0%			0%				0%	
Peak Hour Factor	0.92	0.92	0.92	0.78	0.78	0.78	0.87	0.87	0.87	0.93	0.93	0.93	
Hourly flow rate (vph)	0	0	0	23	33	246	164	440	36	46	1192	49	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type								None				None	
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	2234	2119	458	2094	2112	1216	1241				476		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	2234	2119	458	2094	2112	1216	1241				476		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	0	100	100	21	6	0	71				96		
cM capacity (veh/h)	0	35	607	29	35	221	565				1097		
Direction, Lane #	WB 1	SE 1	NW 1										
Volume Total	302	640	1287										
Volume Left	23	164	46										
Volume Right	246	36	49										
cSH	119	565	1097										
Volume to Capacity	2.54	0.29	0.04										
Queue Length 95th (ft)	677	30	3										
Control Delay (s)	776.9	7.8	1.6										
Lane LOS	F	A	A										
Approach Delay (s)	776.9	7.8	1.6										
Approach LOS	F												
Intersection Summary													
Average Delay			108.4										
Intersection Capacity Utilization			100.0%	ICU Level of Service	G								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	82	92	1056	354	0
Future Volume (Veh/h)	2	82	92	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	2	87	97	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1727	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1727	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	86	92			
cM capacity (veh/h)	90	635	1149			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	89	1209	421			
Volume Left	2	97	0			
Volume Right	87	0	0			
cSH	559	1149	1700			
Volume to Capacity	0.16	0.08	0.25			
Queue Length 95th (ft)	14	7	0			
Control Delay (s)	12.7	2.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.7	2.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	15	104	125	100	65
Future Volume (Veh/h)	60	15	104	125	100	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	70	17	114	137	116	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	519	154	192			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	519	154	192			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	98	92			
cM capacity (veh/h)	478	897	1394			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	87	251	192			
Volume Left	70	114	0			
Volume Right	17	0	76			
cSH	526	1394	1700			
Volume to Capacity	0.17	0.08	0.11			
Queue Length 95th (ft)	15	7	0			
Control Delay (s)	13.2	3.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.2	3.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			35.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	37	35	132	38	0
Future Volume (Veh/h)	0	37	35	132	38	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.91	0.91	0.66	0.66
Hourly flow rate (vph)	0	41	38	145	58	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	183				152	110
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	183				152	110
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1404				845	948
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	41	183	58			
Volume Left	0	0	58			
Volume Right	0	145	0			
cSH	1404	1700	845			
Volume to Capacity	0.00	0.11	0.07			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	9.6			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization		20.0%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Farmers Row & Peabody St

2023 No-Build
Monday Afternoon Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	4	324	34	4	167
Future Volume (Veh/h)	31	4	324	34	4	167
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.65	0.65	0.86	0.86	0.91	0.91
Hourly flow rate (vph)	48	6	377	40	4	184
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	589	397			417	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	589	397			417	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	99			100	
cM capacity (veh/h)	472	657			1153	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	54	417	188			
Volume Left	48	0	4			
Volume Right	6	40	0			
cSH	488	1700	1153			
Volume to Capacity	0.11	0.25	0.00			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	13.3	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	13.3	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			29.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	332	2	37	169	0	130
Future Volume (Veh/h)	332	2	37	169	0	130
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.92	0.92
Hourly flow rate (vph)	405	2	45	204	0	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			407		700	406
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		700	406
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	78
cM capacity (veh/h)			1163		393	649
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	407	249	141			
Volume Left	0	45	0			
Volume Right	2	0	141			
cSH	1700	1163	649			
Volume to Capacity	0.24	0.04	0.22			
Queue Length 95th (ft)	0	3	21			
Control Delay (s)	0.0	1.8	12.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.8	12.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			46.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 No-Build
 Monday Afternoon Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	313	0	10	176	1	20
Future Volume (Veh/h)	313	0	10	176	1	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.87	0.87	0.71	0.71
Hourly flow rate (vph)	352	0	11	202	1	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			352		576	352
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			352		576	352
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1164		478	696
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	352	213	29			
Volume Left	0	11	1			
Volume Right	0	0	28			
cSH	1700	1164	685			
Volume to Capacity	0.21	0.01	0.04			
Queue Length 95th (ft)	0	1	3			
Control Delay (s)	0.0	0.5	10.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			27.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	37	64	809	286	0
Future Volume (Veh/h)	3	37	64	809	286	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	52	77	975	345	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1474	345	345			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1474	345	345			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	96	93	94			
cM capacity (veh/h)	111	702	1225			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	56	1052	345			
Volume Left	4	77	0			
Volume Right	52	0	0			
cSH	509	1225	1700			
Volume to Capacity	0.11	0.06	0.20			
Queue Length 95th (ft)	9	5	0			
Control Delay (s)	12.9	1.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.9	1.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			74.5%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 No-Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	0	1	810	285	61
Future Volume (Veh/h)	64	0	1	810	285	61
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	78	0	1	976	328	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1341	363	398			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1341	363	398			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	54	100	100			
cM capacity (veh/h)	170	686	1172			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	78	977	398			
Volume Left	78	1	0			
Volume Right	0	0	70			
cSH	170	1172	1700			
Volume to Capacity	0.46	0.00	0.23			
Queue Length 95th (ft)	54	0	0			
Control Delay (s)	43.1	0.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	43.1	0.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization		53.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Court St/Hollis St & Main St

2023 No-Build
Monday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	765	181	10	375	5	0	0	0	71	0	9
Future Volume (Veh/h)	0	765	181	10	375	5	0	0	0	71	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.92	0.92	0.92	0.88	0.88	0.88
Hourly flow rate (vph)	0	956	226	11	426	6	0	0	0	81	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	432			1182			1530	1633	429	1520	1523	1069
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432			1182			1530	1633	429	1520	1523	1069
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	16	100	96
cM capacity (veh/h)	1138			598			92	100	630	97	117	272
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	1182	443	91									
Volume Left	0	11	81									
Volume Right	226	6	10									
cSH	1138	598	104									
Volume to Capacity	0.00	0.02	0.87									
Queue Length 95th (ft)	0	1	127									
Control Delay (s)	0.0	0.5	130.9									
Lane LOS		A	F									
Approach Delay (s)	0.0	0.5	130.9									
Approach LOS			F									
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			62.4%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 No-Build
 Monday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	21	21	138	109	325	33	64	791	33	
Future Volume (Veh/h)	0	0	0	21	21	138	109	325	33	64	791	33	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.90	0.90	0.90	0.83	0.83	0.83	
Hourly flow rate (vph)	0	0	0	25	25	166	121	361	37	77	953	40	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type						None				None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1844	1768	380	1748	1767	973	993					398	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1844	1768	380	1748	1767	973	993					398	
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2					2.2	
p0 queue free %	100	100	100	53	62	46	83					93	
cM capacity (veh/h)	16	65	672	53	65	307	700					1166	
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	216	519	1070										
Volume Left	25	121	77										
Volume Right	166	37	40										
cSH	205	700	1166										
Volume to Capacity	1.05	0.17	0.07										
Queue Length 95th (ft)	243	16	5										
Control Delay (s)	126.3	4.6	1.8										
Lane LOS	F	A	A										
Approach Delay (s)	126.3	4.6	1.8										
Approach LOS	F												
Intersection Summary													
Average Delay			17.5										
Intersection Capacity Utilization			64.0%	ICU Level of Service	C								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	37	64	809	286	0
Future Volume (Veh/h)	2	37	64	809	286	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	3	52	77	975	345	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1474	345	345			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1474	345	345			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	97	93	94			
cM capacity (veh/h)	111	702	1225			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	55	1052	345			
Volume Left	3	77	0			
Volume Right	52	0	0			
cSH	545	1225	1700			
Volume to Capacity	0.10	0.06	0.20			
Queue Length 95th (ft)	8	5	0			
Control Delay (s)	12.4	1.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.4	1.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 No-Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	13	45	76	84	37
Future Volume (Veh/h)	25	13	45	76	84	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.74	0.74	0.90	0.90
Hourly flow rate (vph)	31	16	61	103	93	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	338	114	134			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338	114	134			
tC, single (s)	6.4	6.4	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	95	98	96			
cM capacity (veh/h)	634	905	1463			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	47	164	134			
Volume Left	31	61	0			
Volume Right	16	0	41			
cSH	706	1463	1700			
Volume to Capacity	0.07	0.04	0.08			
Queue Length 95th (ft)	5	3	0			
Control Delay (s)	10.5	3.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.5	3.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			26.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 No-Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	0	17	11	69	22	0
Future Volume (Veh/h)	0	17	11	69	22	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.66	0.66	0.75	0.75
Hourly flow rate (vph)	0	23	17	105	29	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122				92	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122				92	70
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1478				912	999
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	23	122	29			
Volume Left	0	0	29			
Volume Right	0	105	0			
cSH	1478	1700	912			
Volume to Capacity	0.00	0.07	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.0	9.1			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.1			
Approach LOS			A			
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			14.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 No-Build
 Monday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	3	166	18	2	104
Future Volume (Veh/h)	8	3	166	18	2	104
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.69	0.69	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	12	4	200	22	2	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	340	211			222	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	340	211			222	
tC, single (s)	6.4	6.2			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.7	
p0 queue free %	98	100			100	
cM capacity (veh/h)	659	834			1109	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	222	127			
Volume Left	12	0	2			
Volume Right	4	22	0			
cSH	695	1700	1109			
Volume to Capacity	0.02	0.13	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s)	10.3	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.3	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			19.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 No-Build
 Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (veh/h)	163	2	23	102	0	69
Future Volume (Veh/h)	163	2	23	102	0	69
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.83	0.83	0.66	0.66
Hourly flow rate (vph)	214	3	28	123	0	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			217		394	216
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			217		394	216
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	87
cM capacity (veh/h)			1365		602	829
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	217	151	105			
Volume Left	0	28	0			
Volume Right	3	0	105			
cSH	1700	1365	829			
Volume to Capacity	0.13	0.02	0.13			
Queue Length 95th (ft)	0	2	11			
Control Delay (s)	0.0	1.6	10.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.6	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			29.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 No-Build
 Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	160	0	7	101	0	14
Future Volume (Veh/h)	160	0	7	101	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.80	0.80	0.65	0.65
Hourly flow rate (vph)	195	0	9	126	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			195		339	195
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			195		339	195
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1390		657	851
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	195	135	22			
Volume Left	0	9	0			
Volume Right	0	0	22			
cSH	1700	1390	851			
Volume to Capacity	0.11	0.01	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.6	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.6	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			21.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	45	408	310	0
Future Volume (Veh/h)	0	42	45	408	310	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	0	59	52	474	352	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	930	352	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	352	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	96			
cM capacity (veh/h)	286	696	1218			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	59	526	352			
Volume Left	0	52	0			
Volume Right	59	0	0			
cSH	696	1218	1700			
Volume to Capacity	0.08	0.04	0.21			
Queue Length 95th (ft)	7	3	0			
Control Delay (s)	10.6	1.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.6	1.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			53.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Main St & Old Ayer Rd

2023 No-Build
Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	46	0	0	399	311	55
Future Volume (Veh/h)	46	0	0	399	311	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	71	0	0	464	353	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	848	384	416			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	848	384	416			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	100	100			
cM capacity (veh/h)	334	668	1154			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	71	464	416			
Volume Left	71	0	0			
Volume Right	0	0	63			
cSH	334	1700	1700			
Volume to Capacity	0.21	0.27	0.24			
Queue Length 95th (ft)	20	0	0			
Control Delay (s)	18.7	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	18.7	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			31.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Court St/Hollis St & Main St

2023 No-Build
Saturday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	403	98	17	341	1	0	0	0	92	2	12
Future Volume (Veh/h)	6	403	98	17	341	1	0	0	0	92	2	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.92	0.92	0.92	0.76	0.76	0.76
Hourly flow rate (vph)	7	491	120	18	363	1	0	0	0	121	3	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	364			611			982	1024	364	964	965	551
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364			611			982	1024	364	964	965	551
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	100	48	99	97
cM capacity (veh/h)	1206			978			217	231	686	231	251	538
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	618	382	140									
Volume Left	7	18	121									
Volume Right	120	1	16									
cSH	1206	978	248									
Volume to Capacity	0.01	0.02	0.57									
Queue Length 95th (ft)	0	1	79									
Control Delay (s)	0.2	0.6	36.9									
Lane LOS	A	A	E									
Approach Delay (s)	0.2	0.6	36.9									
Approach LOS			E									
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Utilization			41.8%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	24	19	110	110	332	9	20	390	40	
Future Volume (Veh/h)	0	0	0	24	19	110	110	332	9	20	390	40	
Sign Control		Stop			Stop			Free				Free	
Grade		0%			0%			0%				0%	
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.84	0.84	0.84	0.71	0.71	0.71	
Hourly flow rate (vph)	0	0	0	25	20	115	131	395	11	28	549	56	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type								None				None	
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1363	1324	400	1296	1301	577	605			406			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1363	1324	400	1296	1301	577	605			406			
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	100	80	85	78	87			98			
cM capacity (veh/h)	77	133	654	124	137	520	978			1164			
Direction, Lane #	WB 1	SE 1	NW 1										
Volume Total	160	537	633										
Volume Left	25	131	28										
Volume Right	115	11	56										
cSH	462	978	1164										
Volume to Capacity	0.35	0.13	0.02										
Queue Length 95th (ft)	38	12	2										
Control Delay (s)	23.1	3.5	0.7										
Lane LOS	C	A	A										
Approach Delay (s)	23.1	3.5	0.7										
Approach LOS	C												
Intersection Summary													
Average Delay			4.5										
Intersection Capacity Utilization			61.5%			ICU Level of Service				B			
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	45	408	310	0
Future Volume (Veh/h)	0	42	45	408	310	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	0	59	52	474	352	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	930	352	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	352	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	96			
cM capacity (veh/h)	286	696	1218			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	59	526	352			
Volume Left	0	52	0			
Volume Right	59	0	0			
cSH	696	1218	1700			
Volume to Capacity	0.08	0.04	0.21			
Queue Length 95th (ft)	7	3	0			
Control Delay (s)	10.6	1.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.6	1.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		46.9%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	9	4	52	69	25
Future Volume (Veh/h)	31	9	4	52	69	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	35	10	5	69	74	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	166	88	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	166	88	101			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	826	976	1504			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	74	101			
Volume Left	35	5	0			
Volume Right	10	0	27			
cSH	855	1504	1700			
Volume to Capacity	0.05	0.00	0.06			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	9.4	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.4	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization		16.0%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 No-Build
 Saturday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↶	↷		↶	
Traffic Volume (veh/h)	0	17	16	11	24	0
Future Volume (Veh/h)	0	17	16	11	24	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.93	0.93	0.72	0.72
Hourly flow rate (vph)	0	21	17	12	33	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	29				44	23
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	29				44	23
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1597				972	1060

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	21	29	33
Volume Left	0	0	33
Volume Right	0	12	0
cSH	1597	1700	972
Volume to Capacity	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

Intersection Summary			
Average Delay		3.5	
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	1	74	15	1	83
Future Volume (Veh/h)	14	1	74	15	1	83
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.69	0.69	0.71	0.71
Hourly flow rate (vph)	16	1	107	22	1	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	237	118			129	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	118			129	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	755	939			1469	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	17	129	118			
Volume Left	16	0	1			
Volume Right	1	22	0			
cSH	764	1700	1469			
Volume to Capacity	0.02	0.08	0.00			
Queue Length 95th (ft)	2	0	0			
Control Delay (s)	9.8	0.0	0.1			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	0.1			
Approach LOS	A					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		15.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↕			↕	↕	
Traffic Volume (veh/h)	72	0	26	83	0	9
Future Volume (Veh/h)	72	0	26	83	0	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.66	0.66	0.74	0.74	0.75	0.75
Hourly flow rate (vph)	109	0	35	112	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			109	291	109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			109	291	109	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			98	100	99	
cM capacity (veh/h)			1494	687	950	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	109	147	12			
Volume Left	0	35	0			
Volume Right	0	0	12			
cSH	1700	1494	950			
Volume to Capacity	0.06	0.02	0.01			
Queue Length 95th (ft)	0	2	1			
Control Delay (s)	0.0	1.9	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.9	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			22.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 No-Build
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	81	0	4	85	0	7
Future Volume (Veh/h)	81	0	4	85	0	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.79	0.79	0.58	0.58
Hourly flow rate (vph)	104	0	5	108	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104	222	104	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104	222	104	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	99	
cM capacity (veh/h)			1500	768	956	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	104	113	12			
Volume Left	0	5	0			
Volume Right	0	0	12			
cSH	1700	1500	956			
Volume to Capacity	0.06	0.00	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.4	8.8			
Lane LOS			A			
Approach Delay (s)	0.0	0.4	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			17.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	83	74	508	552	0
Future Volume (Veh/h)	5	83	74	508	552	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.88	0.88	0.93	0.93
Hourly flow rate (vph)	7	111	84	577	594	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1339	594	594			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339	594	594			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	78	92			
cM capacity (veh/h)	156	507	992			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	118	661	594			
Volume Left	7	84	0			
Volume Right	111	0	0			
cSH	447	992	1700			
Volume to Capacity	0.26	0.08	0.35			
Queue Length 95th (ft)	26	7	0			
Control Delay (s)	15.9	2.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.9	2.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			75.3%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Main St & Old Ayer Rd

2023 No-Build
Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	0	1	517	552	83
Future Volume (Veh/h)	69	0	1	517	552	83
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.93	0.93	0.96	0.96
Hourly flow rate (vph)	90	0	1	556	575	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1176	618	661			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1176	618	661			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	100	100			
cM capacity (veh/h)	211	493	937			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	90	557	661			
Volume Left	90	1	0			
Volume Right	0	0	86			
cSH	211	937	1700			
Volume to Capacity	0.43	0.00	0.39			
Queue Length 95th (ft)	49	0	0			
Control Delay (s)	34.1	0.0	0.0			
Lane LOS	D	A				
Approach Delay (s)	34.1	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			44.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Court St/Hollis St & Main St

2023 No-Build
Saturday Midday Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	493	165	12	629	7	0	0	0	134	0	16
Future Volume (Veh/h)	2	493	165	12	629	7	0	0	0	134	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.92	0.92	0.92	0.93	0.93	0.93
Hourly flow rate (vph)	2	514	172	12	648	7	0	0	0	144	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	655			686			1296	1366	652	1280	1283	600
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655			686			1296	1366	652	1280	1283	600
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	0	100	97
cM capacity (veh/h)	942			917			133	145	468	142	164	505
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	688	667	161									
Volume Left	2	12	144									
Volume Right	172	7	17									
cSH	942	917	154									
Volume to Capacity	0.00	0.01	1.04									
Queue Length 95th (ft)	0	1	205									
Control Delay (s)	0.1	0.3	143.6									
Lane LOS	A	A	F									
Approach Delay (s)	0.1	0.3	143.6									
Approach LOS			F									
Intersection Summary												
Average Delay			15.4									
Intersection Capacity Utilization			57.4%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

5: Main St & Broadmeadow Rd/Lowell Rd

2023 No-Build
Saturday Midday Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	43	23	175	188	565	42	21	506	59	
Future Volume (Veh/h)	0	0	0	43	23	175	188	565	42	21	506	59	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.99	0.99	0.99	0.93	0.93	0.93	
Hourly flow rate (vph)	0	0	0	46	25	188	190	571	42	23	544	63	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1700	1625	592	1594	1614	576	607				613		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1700	1625	592	1594	1614	576	607				613		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	36	70	64	80				98		
cM capacity (veh/h)	30	80	506	72	82	517	971				976		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	259	803	630										
Volume Left	46	190	23										
Volume Right	188	42	63										
cSH	230	971	976										
Volume to Capacity	1.13	0.20	0.02										
Queue Length 95th (ft)	296	18	2										
Control Delay (s)	143.2	4.5	0.6										
Lane LOS	F	A	A										
Approach Delay (s)	143.2	4.5	0.6										
Approach LOS	F												
Intersection Summary													
Average Delay			24.3										
Intersection Capacity Utilization			87.6%	ICU Level of Service			E						
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	83	74	508	552	0
Future Volume (Veh/h)	5	83	74	508	552	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.88	0.88	0.93	0.93
Hourly flow rate (vph)	7	111	84	577	594	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1339	594	594			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339	594	594			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	78	92			
cM capacity (veh/h)	156	507	992			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	118	661	594			
Volume Left	7	84	0			
Volume Right	111	0	0			
cSH	447	992	1700			
Volume to Capacity	0.26	0.08	0.35			
Queue Length 95th (ft)	26	7	0			
Control Delay (s)	15.9	2.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.9	2.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	74	0	69	88	0	84
Future Volume (Veh/h)	74	0	69	88	0	84
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.77	0.75	0.96	0.96
Hourly flow rate (vph)	84	0	90	117	0	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	236	148			207	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	148			207	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	756	904			1376	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	84	207	88			
Volume Left	84	0	0			
Volume Right	0	117	0			
cSH	756	1700	1700			
Volume to Capacity	0.11	0.12	0.05			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	10.4	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.4	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			19.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	9	14	101	116	35
Future Volume (Veh/h)	54	9	14	101	116	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.72	0.72	0.84	0.84
Hourly flow rate (vph)	64	11	19	140	138	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	337	159	180			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	337	159	180			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	99	99			
cM capacity (veh/h)	654	892	1408			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	75	159	180			
Volume Left	64	19	0			
Volume Right	11	0	42			
cSH	680	1408	1700			
Volume to Capacity	0.11	0.01	0.11			
Queue Length 95th (ft)	9	1	0			
Control Delay (s)	10.9	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.9	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			27.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	3	30	21	30	32	1
Future Volume (Veh/h)	3	30	21	30	32	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.68	0.68	0.73	0.73
Hourly flow rate (vph)	4	38	31	44	44	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	75				99	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				99	53
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1537				902	1020
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	42	75	45			
Volume Left	4	0	44			
Volume Right	0	44	1			
cSH	1537	1700	905			
Volume to Capacity	0.00	0.04	0.05			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.7	0.0	9.2			
Lane LOS	A		A			
Approach Delay (s)	0.7	0.0	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization		14.1%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	1	150	29	3	130
Future Volume (Veh/h)	21	1	150	29	3	130
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.92	0.92	0.82	0.82
Hourly flow rate (vph)	28	1	163	32	4	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	346	179			195	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	346	179			195	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	653	869			1390	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	29	195	163			
Volume Left	28	0	4			
Volume Right	1	32	0			
cSH	659	1700	1390			
Volume to Capacity	0.04	0.11	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.7	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	10.7	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			19.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 No-Build
 Saturday Midday Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	150	2	32	134	0	33
Future Volume (Veh/h)	150	2	32	134	0	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.81	0.81	0.73	0.73
Hourly flow rate (vph)	170	2	40	165	0	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			172	416	171	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			172	416	171	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			97	100	95	
cM capacity (veh/h)			1417	580	878	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	172	205	45			
Volume Left	0	40	0			
Volume Right	2	0	45			
cSH	1700	1417	878			
Volume to Capacity	0.10	0.03	0.05			
Queue Length 95th (ft)	0	2	4			
Control Delay (s)	0.0	1.7	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.7	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			30.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 No-Build
 Saturday Midday Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	154	2	10	118	0	15
Future Volume (Veh/h)	154	2	10	118	0	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.86	0.86	0.75	0.75
Hourly flow rate (vph)	157	2	12	137	0	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			159	319		158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			159	319		158
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			99	100		98
cM capacity (veh/h)			1433	673		893
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	159	149	20			
Volume Left	0	12	0			
Volume Right	2	0	20			
cSH	1700	1433	893			
Volume to Capacity	0.09	0.01	0.02			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	0.7	9.1			
Lane LOS			A	A		
Approach Delay (s)	0.0	0.7	9.1			
Approach LOS			A	A		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			24.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 23: Hollis St & Mayfield Rd

2023 No-Build
 Saturday Midday Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	3	177	0	0	148
Future Volume (Veh/h)	2	3	177	0	0	148
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.63	0.63	0.96	0.96	0.93	0.93
Hourly flow rate (vph)	3	5	184	0	0	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	343	184			184	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	343	184			184	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	657	864			1403	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	8	184	159			
Volume Left	3	0	0			
Volume Right	5	0	0			
cSH	773	1700	1403			
Volume to Capacity	0.01	0.11	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	9.7	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.7	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			19.3%	ICU Level of Service		A
Analysis Period (min)			15			

Early/Late Peak Traffic Operations Analysis Sheets 2024 Build Conditions

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	126	152	1056	354	0
Future Volume (Veh/h)	2	126	152	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	2	134	160	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1853	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1853	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	79	86			
cM capacity (veh/h)	71	635	1149			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	136	1272	421			
Volume Left	2	160	0			
Volume Right	134	0	0			
cSH	568	1149	1700			
Volume to Capacity	0.24	0.14	0.25			
Queue Length 95th (ft)	23	12	0			
Control Delay (s)	13.3	4.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.3	4.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			100.5%	ICU Level of Service	G	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Main St & Old Ayer Rd

2023 Build
Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	0	2	1061	354	86
Future Volume (Veh/h)	109	0	2	1061	354	86
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.83	0.83
Hourly flow rate (vph)	125	0	2	1094	427	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1577	479	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1577	479	531			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	100	100			
cM capacity (veh/h)	122	591	1047			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	125	1096	531			
Volume Left	125	2	0			
Volume Right	0	0	104			
cSH	122	1047	1700			
Volume to Capacity	1.03	0.00	0.31			
Queue Length 95th (ft)	177	0	0			
Control Delay (s)	158.0	0.1	0.0			
Lane LOS	F	A				
Approach Delay (s)	158.0	0.1	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			11.3			
Intersection Capacity Utilization			70.1%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Court St/Hollis St & Main St

2023 Build
Monday Afternoon Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	4	1028	258	22	452	3	0	0	0	63	0	23
Future Volume (Veh/h)	4	1028	258	22	452	3	0	0	0	63	0	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Hourly flow rate (vph)	4	1142	287	24	491	3	0	0	0	71	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	494			1429			1860	1978	492	1834	1836	1286
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			1429			1860	1978	492	1834	1836	1286
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			100	100	100	0	100	87
cM capacity (veh/h)	1080			482			47	59	580	56	73	203
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	1433	518	97									
Volume Left	4	24	71									
Volume Right	287	3	26									
cSH	1080	482	69									
Volume to Capacity	0.00	0.05	1.40									
Queue Length 95th (ft)	0	4	200									
Control Delay (s)	0.2	1.5	349.4									
Lane LOS	A	A	F									
Approach Delay (s)	0.2	1.5	349.4									
Approach LOS			F									
Intersection Summary												
Average Delay			17.1									
Intersection Capacity Utilization			82.7%	ICU Level of Service						E		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build
Monday Afternoon Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	23	26	192	143	388	31	43	1113	50	
Future Volume (Veh/h)	0	0	0	23	26	192	143	388	31	43	1113	50	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.78	0.78	0.78	0.87	0.87	0.87	0.93	0.93	0.93	
Hourly flow rate (vph)	0	0	0	29	33	246	164	446	36	46	1197	54	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	2248	2135	464	2108	2126	1224	1251				482		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	2248	2135	464	2108	2126	1224	1251				482		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	0	100	100	0	4	0	71				96		
cM capacity (veh/h)	0	34	602	28	34	218	560				1091		
Direction, Lane #	WB 1	SE 1	NW 1										
Volume Total	308	646	1297										
Volume Left	29	164	46										
Volume Right	246	36	54										
cSH	108	560	1091										
Volume to Capacity	2.86	0.29	0.04										
Queue Length 95th (ft)	725	30	3										
Control Delay (s)	922.9	7.9	1.6										
Lane LOS	F	A	A										
Approach Delay (s)	922.9	7.9	1.6										
Approach LOS	F												
Intersection Summary													
Average Delay			129.5										
Intersection Capacity Utilization			100.4%	ICU Level of Service	G								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	126	152	1056	354	0
Future Volume (Veh/h)	2	126	152	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	2	134	160	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1853	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1853	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	79	86			
cM capacity (veh/h)	71	635	1149			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	136	1272	421			
Volume Left	2	160	0			
Volume Right	134	0	0			
cSH	568	1149	1700			
Volume to Capacity	0.24	0.14	0.25			
Queue Length 95th (ft)	23	12	0			
Control Delay (s)	13.3	4.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.3	4.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	25	112	195	170	65
Future Volume (Veh/h)	60	25	112	195	170	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.91	0.91	0.86	0.86
Hourly flow rate (vph)	70	29	123	214	198	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	696	236	274			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696	236	274			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	96	91			
cM capacity (veh/h)	372	808	1301			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	99	337	274			
Volume Left	70	123	0			
Volume Right	29	0	76			
cSH	442	1301	1700			
Volume to Capacity	0.22	0.09	0.16			
Queue Length 95th (ft)	21	8	0			
Control Delay (s)	15.5	3.5	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.5	3.5	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			44.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build
 Monday Afternoon Peak Hour (Entering)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↶	↷		↶	
Traffic Volume (veh/h)	0	41	39	136	43	0
Future Volume (Veh/h)	0	41	39	136	43	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.91	0.91	0.66	0.66
Hourly flow rate (vph)	0	46	43	149	65	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	192				164	118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192				164	118
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1394				832	940
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	46	192	65			
Volume Left	0	0	65			
Volume Right	0	149	0			
cSH	1394	1700	832			
Volume to Capacity	0.00	0.11	0.08			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	9.7			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization		20.4%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	35	4	324	39	4	167
Future Volume (Veh/h)	35	4	324	39	4	167
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.65	0.65	0.86	0.86	0.91	0.91
Hourly flow rate (vph)	54	6	377	45	4	184
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	592	400			422	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592	400			422	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	99			100	
cM capacity (veh/h)	471	655			1148	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	60	422	188			
Volume Left	54	0	4			
Volume Right	6	45	0			
cSH	485	1700	1148			
Volume to Capacity	0.12	0.25	0.00			
Queue Length 95th (ft)	11	0	0			
Control Delay (s)	13.5	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	13.5	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization		29.4%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build
 Monday Afternoon Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	332	2	42	169	0	134
Future Volume (Veh/h)	332	2	42	169	0	134
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.92	0.92
Hourly flow rate (vph)	405	2	51	204	0	146
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			407		712	406
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			407		712	406
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		100	78
cM capacity (veh/h)			1163		384	649
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	407	255	146			
Volume Left	0	51	0			
Volume Right	2	0	146			
cSH	1700	1163	649			
Volume to Capacity	0.24	0.04	0.22			
Queue Length 95th (ft)	0	3	21			
Control Delay (s)	0.0	2.0	12.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.0	12.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			47.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build
 Monday Afternoon Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	318	0	10	180	1	20
Future Volume (Veh/h)	318	0	10	180	1	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.87	0.87	0.71	0.71
Hourly flow rate (vph)	357	0	11	207	1	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			357	586	357	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			357	586	357	
tC, single (s)			4.2	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.3	3.5	3.3	
p0 queue free %			99	100	96	
cM capacity (veh/h)			1159	472	692	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	357	218	29			
Volume Left	0	11	1			
Volume Right	0	0	28			
cSH	1700	1159	681			
Volume to Capacity	0.21	0.01	0.04			
Queue Length 95th (ft)	0	1	3			
Control Delay (s)	0.0	0.5	10.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.5	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			27.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd

2023 Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	60	15	20	247	115	80
Future Volume (Veh/h)	60	15	20	247	115	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	17	22	274	128	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	490	172	217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	490	172	217			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	98	98			
cM capacity (veh/h)	528	871	1353			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	84	296	217			
Volume Left	67	22	0			
Volume Right	17	0	89			
cSH	574	1353	1700			
Volume to Capacity	0.15	0.02	0.13			
Queue Length 95th (ft)	13	1	0			
Control Delay (s)	12.3	0.7	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.3	0.7	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization		39.3%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	112	115	809	274	0
Future Volume (Veh/h)	3	112	115	809	274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	158	139	975	330	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	330	330			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	96	78	89			
cM capacity (veh/h)	90	716	1241			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	162	1114	330			
Volume Left	4	139	0			
Volume Right	158	0	0			
cSH	611	1241	1700			
Volume to Capacity	0.27	0.11	0.19			
Queue Length 95th (ft)	27	9	0			
Control Delay (s)	13.0	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.0	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			80.5%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	0	1	810	274	68
Future Volume (Veh/h)	75	0	1	810	274	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	91	0	1	976	315	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1332	354	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1332	354	393			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	47	100	100			
cM capacity (veh/h)	172	694	1177			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	91	977	393			
Volume Left	91	1	0			
Volume Right	0	0	78			
cSH	172	1177	1700			
Volume to Capacity	0.53	0.00	0.23			
Queue Length 95th (ft)	67	0	0			
Control Delay (s)	47.4	0.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	47.4	0.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			54.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build
 Monday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	768	185	10	377	5	0	0	0	74	0	9
Future Volume (Veh/h)	0	768	185	10	377	5	0	0	0	74	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.92	0.92	0.92	0.88	0.88	0.88
Hourly flow rate (vph)	0	960	231	11	428	6	0	0	0	84	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434			1191			1538	1644	431	1528	1532	1076
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434			1191			1538	1644	431	1528	1532	1076
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	12	100	96
cM capacity (veh/h)	1136			593			91	99	629	96	116	269
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	1191	445	94									
Volume Left	0	11	84									
Volume Right	231	6	10									
cSH	1136	593	103									
Volume to Capacity	0.00	0.02	0.92									
Queue Length 95th (ft)	0	1	136									
Control Delay (s)	0.0	0.5	143.0									
Lane LOS		A	F									
Approach Delay (s)	0.0	0.5	143.0									
Approach LOS			F									
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Utilization			63.0%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	25	21	138	109	329	33	64	797	39	
Future Volume (Veh/h)	0	0	0	25	21	138	109	329	33	64	797	39	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.90	0.90	0.90	0.83	0.83	0.83	
Hourly flow rate (vph)	0	0	0	30	25	166	121	366	37	77	960	47	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type						None			None				
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1860	1788	384	1764	1782	984	1007					403	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1860	1788	384	1764	1782	984	1007					403	
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2					2.2	
p0 queue free %	100	100	100	42	61	45	83					93	
cM capacity (veh/h)	15	63	668	52	64	303	692					1161	
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	221	524	1084										
Volume Left	30	121	77										
Volume Right	166	37	47										
cSH	187	692	1161										
Volume to Capacity	1.18	0.17	0.07										
Queue Length 95th (ft)	286	16	5										
Control Delay (s)	173.7	4.6	1.8										
Lane LOS	F	A	A										
Approach Delay (s)	173.7	4.6	1.8										
Approach LOS	F												
Intersection Summary													
Average Delay			23.4										
Intersection Capacity Utilization			64.5%	ICU Level of Service				C					
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	112	115	809	274	0
Future Volume (Veh/h)	2	112	115	809	274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	3	158	139	975	330	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	330	330			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	97	78	89			
cM capacity (veh/h)	90	716	1241			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	161	1114	330			
Volume Left	3	139	0			
Volume Right	158	0	0			
cSH	634	1241	1700			
Volume to Capacity	0.25	0.11	0.19			
Queue Length 95th (ft)	25	9	0			
Control Delay (s)	12.6	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	18	58	164	144	37
Future Volume (Veh/h)	25	18	58	164	144	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.74	0.74	0.90	0.90
Hourly flow rate (vph)	31	23	78	222	160	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	558	180	201			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	558	180	201			
tC, single (s)	6.4	6.4	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	97	94			
cM capacity (veh/h)	466	830	1383			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	54	300	201			
Volume Left	31	78	0			
Volume Right	23	0	41			
cSH	573	1383	1700			
Volume to Capacity	0.09	0.06	0.12			
Queue Length 95th (ft)	8	4	0			
Control Delay (s)	11.9	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.9	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			35.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	0	23	17	75	26	0
Future Volume (Veh/h)	0	23	17	75	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.66	0.66	0.75	0.75
Hourly flow rate (vph)	0	31	26	114	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	140				114	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	140				114	83
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1456				887	982

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	31	140	35
Volume Left	0	0	35
Volume Right	0	114	0
cSH	1456	1700	887
Volume to Capacity	0.00	0.08	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	3	166	22	2	104
Future Volume (Veh/h)	14	3	166	22	2	104
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.69	0.69	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	20	4	200	27	2	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	342	214			227	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	342	214			227	
tC, single (s)	6.4	6.2			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.7	
p0 queue free %	97	100			100	
cM capacity (veh/h)	657	832			1104	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	227	127			
Volume Left	20	0	2			
Volume Right	4	27	0			
cSH	680	1700	1104			
Volume to Capacity	0.04	0.13	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.5	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.5	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			20.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Farmers Row & Higley St

2023 Build
Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	163	2	27	102	0	75
Future Volume (Veh/h)	163	2	27	102	0	75
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.83	0.83	0.66	0.66
Hourly flow rate (vph)	214	3	33	123	0	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			217	404	216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			217	404	216	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			98	100	86	
cM capacity (veh/h)			1365	591	829	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	217	156	114			
Volume Left	0	33	0			
Volume Right	3	0	114			
cSH	1700	1365	829			
Volume to Capacity	0.13	0.02	0.14			
Queue Length 95th (ft)	0	2	12			
Control Delay (s)	0.0	1.8	10.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.8	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			30.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	164	0	7	107	0	14
Future Volume (Veh/h)	164	0	7	107	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.80	0.80	0.65	0.65
Hourly flow rate (vph)	200	0	9	134	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			200		352	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		352	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1384		645	846
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	200	143	22			
Volume Left	0	9	0			
Volume Right	0	0	22			
cSH	1700	1384	846			
Volume to Capacity	0.12	0.01	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.5	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			21.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	25	17	121	95	68
Future Volume (Veh/h)	100	25	17	121	95	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	111	28	19	134	106	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	316	144	182			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316	144	182			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	97	99			
cM capacity (veh/h)	668	903	1393			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	139	153	182			
Volume Left	111	19	0			
Volume Right	28	0	76			
cSH	705	1393	1700			
Volume to Capacity	0.20	0.01	0.11			
Queue Length 95th (ft)	18	1	0			
Control Delay (s)	11.4	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.4	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			33.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Main St & Old Ayer Rd

2023 Build
Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	0	1	810	274	68
Future Volume (Veh/h)	75	0	1	810	274	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	91	0	1	976	315	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1332	354	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1332	354	393			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	47	100	100			
cM capacity (veh/h)	172	694	1177			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	91	977	393			
Volume Left	91	1	0			
Volume Right	0	0	78			
cSH	172	1177	1700			
Volume to Capacity	0.53	0.00	0.23			
Queue Length 95th (ft)	67	0	0			
Control Delay (s)	47.4	0.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	47.4	0.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		54.2%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build
 Monday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	768	185	10	377	5	0	0	0	74	0	9
Future Volume (Veh/h)	0	768	185	10	377	5	0	0	0	74	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.92	0.92	0.92	0.88	0.88	0.88
Hourly flow rate (vph)	0	960	231	11	428	6	0	0	0	84	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434			1191			1538	1644	431	1528	1532	1076
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434			1191			1538	1644	431	1528	1532	1076
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	12	100	96
cM capacity (veh/h)	1136			593			91	99	629	96	116	269
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	1191	445	94									
Volume Left	0	11	84									
Volume Right	231	6	10									
cSH	1136	593	103									
Volume to Capacity	0.00	0.02	0.92									
Queue Length 95th (ft)	0	1	136									
Control Delay (s)	0.0	0.5	143.0									
Lane LOS		A	F									
Approach Delay (s)	0.0	0.5	143.0									
Approach LOS			F									
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Utilization			63.0%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	25	21	138	109	329	33	64	797	39	
Future Volume (Veh/h)	0	0	0	25	21	138	109	329	33	64	797	39	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.90	0.90	0.90	0.83	0.83	0.83	
Hourly flow rate (vph)	0	0	0	30	25	166	121	366	37	77	960	47	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type								None			None		
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1860	1788	384	1764	1782	984	1007			403			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1860	1788	384	1764	1782	984	1007			403			
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	100	42	61	45	83			93			
cM capacity (veh/h)	15	63	668	52	64	303	692			1161			
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	221	524	1084										
Volume Left	30	121	77										
Volume Right	166	37	47										
cSH	187	692	1161										
Volume to Capacity	1.18	0.17	0.07										
Queue Length 95th (ft)	286	16	5										
Control Delay (s)	173.7	4.6	1.8										
Lane LOS	F	A	A										
Approach Delay (s)	173.7	4.6	1.8										
Approach LOS	F												
Intersection Summary													
Average Delay			23.4										
Intersection Capacity Utilization		64.5%		ICU Level of Service						C			
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	112	115	809	274	0
Future Volume (Veh/h)	2	112	115	809	274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	3	158	139	975	330	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	330	330			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	97	78	89			
cM capacity (veh/h)	90	716	1241			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	161	1114	330			
Volume Left	3	139	0			
Volume Right	158	0	0			
cSH	634	1241	1700			
Volume to Capacity	0.25	0.11	0.19			
Queue Length 95th (ft)	25	9	0			
Control Delay (s)	12.6	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
2: Main St & Old Ayer Rd

2023 Mitigated Build
Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	77	0	1	808	274	68
Future Volume (Veh/h)	77	0	1	808	274	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	94	0	1	973	315	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1329	354	393			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1329	354	393			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	45	100	100			
cM capacity (veh/h)	172	694	1177			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	94	974	393			
Volume Left	94	1	0			
Volume Right	0	0	78			
cSH	172	1177	1700			
Volume to Capacity	0.55	0.00	0.23			
Queue Length 95th (ft)	70	0	0			
Control Delay (s)	48.4	0.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	48.4	0.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		54.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	1	749	259	126
Future Volume (Veh/h)	70	0	1	749	259	126
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	88	0	1	788	294	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1156	366	437			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1156	366	437			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	100	100			
cM capacity (veh/h)	219	684	1134			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	88	789	437			
Volume Left	88	1	0			
Volume Right	0	0	143			
cSH	219	1134	1700			
Volume to Capacity	0.40	0.00	0.26			
Queue Length 95th (ft)	45	0	0			
Control Delay (s)	32.0	0.0	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.0	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			50.8%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection				
Intersection Delay, s/veh	3.8			
Intersection LOS	A			
Approach	EB	NB	SB	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adj Approach Flow, veh/h	266	1113	412	
Demand Flow Rate, veh/h	302	1123	419	
Vehicles Circulating, veh/h	337	144	140	
Vehicles Exiting, veh/h	222	495	144	
Follow-Up Headway, s	3.186	3.186	3.186	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	9.9	0.6	8.6	
Approach LOS	A	A	A	
Lane	Left	Left	Bypass	Left
Designated Moves	LR	L	R	TR
Assumed Moves	LR	L	R	TR
RT Channelized			Free	
Lane Util	1.000	1.000		1.000
Critical Headway, s	5.193	5.193		5.193
Entry Flow, veh/h	302	140	983	419
Cap Entry Lane, veh/h	807	978	1919	982
Entry HV Adj Factor	0.881	1.000	0.990	0.984
Flow Entry, veh/h	266	140	973	412
Cap Entry, veh/h	711	978	1900	967
V/C Ratio	0.374	0.143	0.512	0.427
Control Delay, s/veh	9.9	5.0	0.0	8.6
LOS	A	A	A	A
95th %tile Queue, veh	2	0	3	2

Intersection			
Intersection Delay, s/veh	63.7		
Intersection LOS	F		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	266	1113	412
Demand Flow Rate, veh/h	302	1123	419
Vehicles Circulating, veh/h	337	144	140
Vehicles Exiting, veh/h	222	495	1127
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.9	96.9	8.6
Approach LOS	A	F	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	302	1123	419
Cap Entry Lane, veh/h	807	978	982
Entry HV Adj Factor	0.881	0.991	0.984
Flow Entry, veh/h	266	1113	412
Cap Entry, veh/h	711	970	967
V/C Ratio	0.374	1.148	0.427
Control Delay, s/veh	9.9	96.9	8.6
LOS	A	F	A
95th %tile Queue, veh	2	31	2

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	112	115	809	274	0
Future Volume (Veh/h)	0	112	115	809	274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	158	139	975	330	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	330	330			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	100	78	89			
cM capacity (veh/h)	90	716	1241			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	158	139	975	330		
Volume Left	0	139	0	0		
Volume Right	158	0	0	0		
cSH	716	1241	1700	1700		
Volume to Capacity	0.22	0.11	0.57	0.19		
Queue Length 95th (ft)	21	9	0	0		
Control Delay (s)	11.4	8.3	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	11.4	1.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			45.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Mitigated Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑			↗
Traffic Volume (veh/h)	77	112	115	0	0	69
Future Volume (Veh/h)	77	112	115	0	0	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.71	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	94	158	139	0	0	79
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	139				485	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	139				485	139
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				100	91
cM capacity (veh/h)	1457				510	909
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	252	139	79			
Volume Left	94	0	0			
Volume Right	0	0	79			
cSH	1457	1700	909			
Volume to Capacity	0.06	0.08	0.09			
Queue Length 95th (ft)	5	0	7			
Control Delay (s)	3.2	0.0	9.3			
Lane LOS	A		A			
Approach Delay (s)	3.2	0.0	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization		20.2%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Mitigated Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↗
Traffic Volume (veh/h)	0	189	115	0	0	69
Future Volume (Veh/h)	0	189	115	0	0	69
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.71	0.83	0.83	0.87	0.87
Hourly flow rate (vph)	0	266	139	0	0	79
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	139				405	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	139				405	139
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	91
cM capacity (veh/h)	1457				606	909

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	266	139	79
Volume Left	0	0	0
Volume Right	0	0	79
cSH	1700	1700	909
Volume to Capacity	0.16	0.08	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization		17.0%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	18	58	164	144	37
Future Volume (Veh/h)	25	18	58	164	144	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.74	0.74	0.90	0.90
Hourly flow rate (vph)	31	23	78	222	160	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	558	180	201			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	558	180	201			
tC, single (s)	6.4	6.4	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	97	94			
cM capacity (veh/h)	466	830	1383			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	54	300	201			
Volume Left	31	78	0			
Volume Right	23	0	41			
cSH	573	1383	1700			
Volume to Capacity	0.09	0.06	0.12			
Queue Length 95th (ft)	8	4	0			
Control Delay (s)	11.9	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.9	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			35.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	0	23	17	75	26	0
Future Volume (Veh/h)	0	23	17	75	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.66	0.66	0.75	0.75
Hourly flow rate (vph)	0	31	26	114	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	140				114	83
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	140				114	83
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1456				887	982

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	31	140	35
Volume Left	0	0	35
Volume Right	0	114	0
cSH	1456	1700	887
Volume to Capacity	0.00	0.08	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build
 Monday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	3	166	22	2	104
Future Volume (Veh/h)	14	3	166	22	2	104
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.69	0.69	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	20	4	200	27	2	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	342	214			227	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	342	214			227	
tC, single (s)	6.4	6.2			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.7	
p0 queue free %	97	100			100	
cM capacity (veh/h)	657	832			1104	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	227	127			
Volume Left	20	0	2			
Volume Right	4	27	0			
cSH	680	1700	1104			
Volume to Capacity	0.04	0.13	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.5	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.5	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		20.1%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build
 Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	163	2	27	102	0	75
Future Volume (Veh/h)	163	2	27	102	0	75
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.83	0.83	0.66	0.66
Hourly flow rate (vph)	214	3	33	123	0	114
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			217	404	216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			217	404	216	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			98	100	86	
cM capacity (veh/h)			1365	591	829	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	217	156	114			
Volume Left	0	33	0			
Volume Right	3	0	114			
cSH	1700	1365	829			
Volume to Capacity	0.13	0.02	0.14			
Queue Length 95th (ft)	0	2	12			
Control Delay (s)	0.0	1.8	10.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.8	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			30.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build
 Monday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	164	0	7	107	0	14
Future Volume (Veh/h)	164	0	7	107	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.80	0.80	0.65	0.65
Hourly flow rate (vph)	200	0	9	134	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			200	352	200	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200	352	200	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			99	100	97	
cM capacity (veh/h)			1384	645	846	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	200	143	22			
Volume Left	0	9	0			
Volume Right	0	0	22			
cSH	1700	1384	846			
Volume to Capacity	0.12	0.01	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.5	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			21.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Old Ayer Rd

2023 Build
Monday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	25	17	121	95	68
Future Volume (Veh/h)	100	25	17	121	95	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	111	28	19	134	106	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	316	144	182			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316	144	182			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	97	99			
cM capacity (veh/h)	668	903	1393			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	139	153	182			
Volume Left	111	19	0			
Volume Right	28	0	76			
cSH	705	1393	1700			
Volume to Capacity	0.20	0.01	0.11			
Queue Length 95th (ft)	18	1	0			
Control Delay (s)	11.4	1.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.4	1.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization		33.5%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Future Volume (Veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Hourly flow rate (vph)	1	789	181	11	404	4	0	0	0	100	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	408			970			1320	1400	406	1310	1312	880
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			970			1320	1400	406	1310	1312	880
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	26	100	97
cM capacity (veh/h)	1162			719			129	139	649	136	158	349
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	971	419	111									
Volume Left	1	11	100									
Volume Right	181	4	11									
cSH	1162	719	145									
Volume to Capacity	0.00	0.02	0.77									
Queue Length 95th (ft)	0	1	117									
Control Delay (s)	0.0	0.5	84.2									
Lane LOS	A	A	F									
Approach Delay (s)	0.0	0.5	84.2									
Approach LOS			F									
Intersection Summary												
Average Delay			6.4									
Intersection Capacity Utilization			59.0%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Future Volume (Veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.87	0.87	0.87	0.94	0.94	0.94	
Hourly flow rate (vph)	0	0	0	63	25	175	110	397	36	70	769	34	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1661	1578	415	1561	1579	786	803				433		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1661	1578	415	1561	1579	786	803				433		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	20	72	56	87				94		
cM capacity (veh/h)	30	90	642	79	90	395	821				1137		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	263	543	873										
Volume Left	63	110	70										
Volume Right	175	36	34										
cSH	197	821	1137										
Volume to Capacity	1.34	0.13	0.06										
Queue Length 95th (ft)	372	12	5										
Control Delay (s)	228.3	3.5	1.6										
Lane LOS	F	A	A										
Approach Delay (s)	228.3	3.5	1.6										
Approach LOS	F												
Intersection Summary													
Average Delay			37.7										
Intersection Capacity Utilization			58.6%	ICU Level of Service	B								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	58	464	751	258	0
Future Volume (Veh/h)	1	58	464	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	73	494	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2080	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2080	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	96	90	61			
cM capacity (veh/h)	26	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	74	1293	293			
Volume Left	1	494	0			
Volume Right	73	0	0			
cSH	548	1280	1700			
Volume to Capacity	0.14	0.39	0.17			
Queue Length 95th (ft)	12	46	0			
Control Delay (s)	12.6	8.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	8.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	464	0	70	59	0	127
Future Volume (Veh/h)	464	0	70	59	0	127
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.85	0.80	0.80	0.88	0.88
Hourly flow rate (vph)	494	0	88	74	0	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	269	125			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269	125			162	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	32	100			100	
cM capacity (veh/h)	725	931			1429	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	494	162	144			
Volume Left	494	0	0			
Volume Right	0	74	0			
cSH	725	1700	1700			
Volume to Capacity	0.68	0.10	0.08			
Queue Length 95th (ft)	135	0	0			
Control Delay (s)	19.9	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	19.9	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			12.3			
Intersection Capacity Utilization			39.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	70	31	102	571	36
Future Volume (Veh/h)	27	70	31	102	571	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.93	0.93
Hourly flow rate (vph)	31	81	36	119	614	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	824	634	653			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	824	634	653			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	91	82	96			
cM capacity (veh/h)	332	460	943			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	112	155	653			
Volume Left	31	36	0			
Volume Right	81	0	39			
cSH	416	943	1700			
Volume to Capacity	0.27	0.04	0.38			
Queue Length 95th (ft)	27	3	0			
Control Delay (s)	16.8	2.4	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.8	2.4	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			44.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	96	0	0	67	0	2	0	0	0	0	0
Future Volume (Veh/h)	0	96	0	0	67	0	2	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	192	0	0	134	0	4	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	134			192			326	326	192	326	326	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134			192			326	326	192	326	326	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1463			1394			631	596	855	631	596	920
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	192	134	4	0								
Volume Left	0	0	4	0								
Volume Right	0	0	0	0								
cSH	1463	1394	631	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (ft)	0	0	0	0								
Control Delay (s)	0.0	0.0	10.7	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.7	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			15.1%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	46	17	54	50	0
Future Volume (Veh/h)	0	46	17	54	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.70	0.70	0.97	0.97	0.71	0.71
Hourly flow rate (vph)	0	66	18	56	70	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74				112	46
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74				112	46
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1538				890	1029
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	66	74	70			
Volume Left	0	0	70			
Volume Right	0	56	0			
cSH	1538	1700	890			
Volume to Capacity	0.00	0.04	0.08			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	9.4			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		14.2%		ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	1	174	46	1	94
Future Volume (Veh/h)	16	1	174	46	1	94
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.70	0.70	0.81	0.81	0.72	0.72
Hourly flow rate (vph)	23	1	215	57	1	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	244			272	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	244			272	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	628	800			1303	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	272	132			
Volume Left	23	0	1			
Volume Right	1	57	0			
cSH	634	1700	1303			
Volume to Capacity	0.04	0.16	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.9	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.9	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			22.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	170	2	48	94	0	56
Future Volume (Veh/h)	170	2	48	94	0	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.74	0.74	0.88	0.88
Hourly flow rate (vph)	224	3	65	127	0	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			227	482	226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			227	482	226	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			95	100	92	
cM capacity (veh/h)			1353	520	819	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	227	192	64			
Volume Left	0	65	0			
Volume Right	3	0	64			
cSH	1700	1353	819			
Volume to Capacity	0.13	0.05	0.08			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.9	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			30.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (veh/h)	203	0	10	96	0	14
Future Volume (Veh/h)	203	0	10	96	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.73	0.73	0.65	0.65
Hourly flow rate (vph)	242	0	14	132	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			242	402	242	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			242	402	242	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			99	100	97	
cM capacity (veh/h)			1336	602	802	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	242	146	22			
Volume Left	0	14	0			
Volume Right	0	0	22			
cSH	1700	1336	802			
Volume to Capacity	0.14	0.01	0.03			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	0.8	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.8	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			23.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 23: Hollis St & Mayfield Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	166	5	0	92
Future Volume (Veh/h)	0	1	166	5	0	92
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	180	5	0	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	282	182			185	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	282	182			185	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	708	860			1390	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	1	185	100			
Volume Left	0	0	0			
Volume Right	1	5	0			
cSH	860	1700	1390			
Volume to Capacity	0.00	0.11	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			19.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd & Site Drive

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	5	92	110	118	523
Future Volume (Veh/h)	23	5	92	110	118	523
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	46	10	184	220	236	1046
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1347	759	1282			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1347	759	1282			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	98	66			
cM capacity (veh/h)	110	406	541			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	56	404	1282			
Volume Left	46	184	0			
Volume Right	10	0	1046			
cSH	126	541	1700			
Volume to Capacity	0.44	0.34	0.75			
Queue Length 95th (ft)	49	37	0			
Control Delay (s)	54.4	10.0	0.0			
Lane LOS	F	B				
Approach Delay (s)	54.4	10.0	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization		62.7%		ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	58	464	751	258	0
Future Volume (Veh/h)	1	58	464	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	73	494	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2080	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2080	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	96	90	61			
cM capacity (veh/h)	26	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	74	1293	293			
Volume Left	1	494	0			
Volume Right	73	0	0			
cSH	548	1280	1700			
Volume to Capacity	0.14	0.39	0.17			
Queue Length 95th (ft)	12	46	0			
Control Delay (s)	12.6	8.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	8.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			92.4%	ICU Level of Service		F
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	1	749	259	126
Future Volume (Veh/h)	70	0	1	749	259	126
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	88	0	1	788	294	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1156	366	437			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1156	366	437			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	100	100			
cM capacity (veh/h)	219	684	1134			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	88	789	437			
Volume Left	88	1	0			
Volume Right	0	0	143			
cSH	219	1134	1700			
Volume to Capacity	0.40	0.00	0.26			
Queue Length 95th (ft)	45	0	0			
Control Delay (s)	32.0	0.0	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.0	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			50.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Future Volume (Veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Hourly flow rate (vph)	1	789	181	11	404	4	0	0	0	100	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	408			970			1320	1400	406	1310	1312	880
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			970			1320	1400	406	1310	1312	880
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	26	100	97
cM capacity (veh/h)	1162			719			129	139	649	136	158	349
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	971	419	111									
Volume Left	1	11	100									
Volume Right	181	4	11									
cSH	1162	719	145									
Volume to Capacity	0.00	0.02	0.77									
Queue Length 95th (ft)	0	1	117									
Control Delay (s)	0.0	0.5	84.2									
Lane LOS	A	A	F									
Approach Delay (s)	0.0	0.5	84.2									
Approach LOS			F									
Intersection Summary												
Average Delay			6.4									
Intersection Capacity Utilization			59.0%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Future Volume (Veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.87	0.87	0.87	0.94	0.94	0.94	
Hourly flow rate (vph)	0	0	0	63	25	175	110	397	36	70	769	34	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)							2						
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1661	1578	415	1561	1579	786	803				433		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1661	1578	415	1561	1579	786	803				433		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	20	72	56	87				94		
cM capacity (veh/h)	30	90	642	79	90	395	821				1137		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	263	543	873										
Volume Left	63	110	70										
Volume Right	175	36	34										
cSH	197	821	1137										
Volume to Capacity	1.34	0.13	0.06										
Queue Length 95th (ft)	372	12	5										
Control Delay (s)	228.3	3.5	1.6										
Lane LOS	F	A	A										
Approach Delay (s)	228.3	3.5	1.6										
Approach LOS	F												
Intersection Summary													
Average Delay	37.7												
Intersection Capacity Utilization	58.6%			ICU Level of Service			B						
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	58	464	751	258	0
Future Volume (Veh/h)	1	58	464	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	73	494	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2080	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2080	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	96	90	61			
cM capacity (veh/h)	26	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	74	1293	293			
Volume Left	1	494	0			
Volume Right	73	0	0			
cSH	548	1280	1700			
Volume to Capacity	0.14	0.39	0.17			
Queue Length 95th (ft)	12	46	0			
Control Delay (s)	12.6	8.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	8.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	8	31	102	571	36
Future Volume (Veh/h)	27	8	31	102	571	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.93	0.93
Hourly flow rate (vph)	31	9	36	119	614	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	824	634	653			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	824	634	653			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	91	98	96			
cM capacity (veh/h)	332	460	943			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	40	155	653			
Volume Left	31	36	0			
Volume Right	9	0	39			
cSH	354	943	1700			
Volume to Capacity	0.11	0.04	0.38			
Queue Length 95th (ft)	9	3	0			
Control Delay (s)	16.5	2.4	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.5	2.4	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			42.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	34	62	0	67	0	2	0	0	0	0	0
Future Volume (Veh/h)	0	34	62	0	67	0	2	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	68	124	0	134	0	4	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	134			192			264	264	130	264	326	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134			192			264	264	130	264	326	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1463			1394			693	645	925	693	596	920
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	192	134	4	0								
Volume Left	0	0	4	0								
Volume Right	124	0	0	0								
cSH	1463	1394	693	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (ft)	0	0	0	0								
Control Delay (s)	0.0	0.0	10.2	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.2	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			15.6%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	46	17	54	50	0
Future Volume (Veh/h)	0	46	17	54	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.70	0.70	0.97	0.97	0.71	0.71
Hourly flow rate (vph)	0	66	18	56	70	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74				112	46
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74				112	46
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1538				890	1029
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	66	74	70			
Volume Left	0	0	70			
Volume Right	0	56	0			
cSH	1538	1700	890			
Volume to Capacity	0.00	0.04	0.08			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	9.4			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		14.2%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	1	174	46	1	94
Future Volume (Veh/h)	16	1	174	46	1	94
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.70	0.70	0.81	0.81	0.72	0.72
Hourly flow rate (vph)	23	1	215	57	1	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	244			272	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	244			272	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	628	800			1303	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	272	132			
Volume Left	23	0	1			
Volume Right	1	57	0			
cSH	634	1700	1303			
Volume to Capacity	0.04	0.16	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.9	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.9	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			22.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	170	2	48	94	0	56
Future Volume (Veh/h)	170	2	48	94	0	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.74	0.74	0.88	0.88
Hourly flow rate (vph)	224	3	65	127	0	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			227	482	226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			227	482	226	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			95	100	92	
cM capacity (veh/h)			1353	520	819	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	227	192	64			
Volume Left	0	65	0			
Volume Right	3	0	64			
cSH	1700	1353	819			
Volume to Capacity	0.13	0.05	0.08			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.9	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			30.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	203	0	10	96	0	14
Future Volume (Veh/h)	203	0	10	96	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.73	0.73	0.65	0.65
Hourly flow rate (vph)	242	0	14	132	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			242		402	242
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			242		402	242
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1336		602	802
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	242	146	22			
Volume Left	0	14	0			
Volume Right	0	0	22			
cSH	1700	1336	802			
Volume to Capacity	0.14	0.01	0.03			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	0.8	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.8	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			23.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Old Ayer Rd

2023 Build (Large Concert)
Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	5	92	110	118	461
Future Volume (Veh/h)	23	5	92	110	118	461
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	46	10	184	220	236	922
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1285	697	1158			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1285	697	1158			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	64	98	70			
cM capacity (veh/h)	126	441	603			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	56	404	1158			
Volume Left	46	184	0			
Volume Right	10	0	922			
cSH	145	603	1700			
Volume to Capacity	0.39	0.30	0.68			
Queue Length 95th (ft)	41	32	0			
Control Delay (s)	44.8	8.8	0.0			
Lane LOS	E	A				
Approach Delay (s)	44.8	8.8	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization		58.8%		ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	0	1	749	259	126
Future Volume (Veh/h)	70	0	1	749	259	126
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	88	0	1	788	294	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1156	366	437			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1156	366	437			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	100	100			
cM capacity (veh/h)	219	684	1134			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	88	789	437			
Volume Left	88	1	0			
Volume Right	0	0	143			
cSH	219	1134	1700			
Volume to Capacity	0.40	0.00	0.26			
Queue Length 95th (ft)	45	0	0			
Control Delay (s)	32.0	0.0	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.0	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization		50.8%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Future Volume (Veh/h)	1	702	161	10	368	4	0	0	0	83	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Hourly flow rate (vph)	1	789	181	11	404	4	0	0	0	100	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	408			970			1320	1400	406	1310	1312	880
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	408			970			1320	1400	406	1310	1312	880
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	26	100	97
cM capacity (veh/h)	1162			719			129	139	649	136	158	349
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	971	419	111									
Volume Left	1	11	100									
Volume Right	181	4	11									
cSH	1162	719	145									
Volume to Capacity	0.00	0.02	0.77									
Queue Length 95th (ft)	0	1	117									
Control Delay (s)	0.0	0.5	84.2									
Lane LOS	A	A	F									
Approach Delay (s)	0.0	0.5	84.2									
Approach LOS			F									
Intersection Summary												
Average Delay			6.4									
Intersection Capacity Utilization			59.0%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Future Volume (Veh/h)	0	0	0	47	19	131	96	345	31	66	723	32	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.87	0.87	0.87	0.94	0.94	0.94	
Hourly flow rate (vph)	0	0	0	63	25	175	110	397	36	70	769	34	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1661	1578	415	1561	1579	786	803				433		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1661	1578	415	1561	1579	786	803				433		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	20	72	56	87				94		
cM capacity (veh/h)	30	90	642	79	90	395	821				1137		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	263	543	873										
Volume Left	63	110	70										
Volume Right	175	36	34										
cSH	197	821	1137										
Volume to Capacity	1.34	0.13	0.06										
Queue Length 95th (ft)	372	12	5										
Control Delay (s)	228.3	3.5	1.6										
Lane LOS	F	A	A										
Approach Delay (s)	228.3	3.5	1.6										
Approach LOS	F												
Intersection Summary													
Average Delay			37.7										
Intersection Capacity Utilization			58.6%	ICU Level of Service		B							
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	58	464	751	258	0
Future Volume (Veh/h)	1	58	464	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	73	494	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2080	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2080	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	96	90	61			
cM capacity (veh/h)	26	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	74	1293	293			
Volume Left	1	494	0			
Volume Right	73	0	0			
cSH	548	1280	1700			
Volume to Capacity	0.14	0.39	0.17			
Queue Length 95th (ft)	12	46	0			
Control Delay (s)	12.6	8.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.6	8.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			6.8			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	464	0	70	59	0	127
Future Volume (Veh/h)	464	0	70	59	0	127
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.85	0.80	0.80	0.88	0.88
Hourly flow rate (vph)	494	0	88	74	0	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	269	125			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269	125			162	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	32	100			100	
cM capacity (veh/h)	725	931			1429	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	494	162	144			
Volume Left	494	0	0			
Volume Right	0	74	0			
cSH	725	1700	1700			
Volume to Capacity	0.68	0.10	0.08			
Queue Length 95th (ft)	135	0	0			
Control Delay (s)	19.9	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	19.9	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			12.3			
Intersection Capacity Utilization			39.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	70	31	102	571	36
Future Volume (Veh/h)	27	70	31	102	571	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.93	0.93
Hourly flow rate (vph)	31	81	36	119	614	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	824	634	653			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	824	634	653			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	91	82	96			
cM capacity (veh/h)	332	460	943			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	112	155	653			
Volume Left	31	36	0			
Volume Right	81	0	39			
cSH	416	943	1700			
Volume to Capacity	0.27	0.04	0.38			
Queue Length 95th (ft)	27	3	0			
Control Delay (s)	16.8	2.4	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.8	2.4	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			44.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	96	0	0	67	0	2	0	0	0	0	0
Future Volume (Veh/h)	0	96	0	0	67	0	2	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	192	0	0	134	0	4	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	134			192			326	326	192	326	326	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134			192			326	326	192	326	326	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1463			1394			631	596	855	631	596	920
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	192	134	4	0								
Volume Left	0	0	4	0								
Volume Right	0	0	0	0								
cSH	1463	1394	631	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (ft)	0	0	0	0								
Control Delay (s)	0.0	0.0	10.7	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.7	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			15.1%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	46	17	54	50	0
Future Volume (Veh/h)	0	46	17	54	50	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.70	0.70	0.97	0.97	0.71	0.71
Hourly flow rate (vph)	0	66	18	56	70	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74				112	46
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74				112	46
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1538				890	1029
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	66	74	70			
Volume Left	0	0	70			
Volume Right	0	56	0			
cSH	1538	1700	890			
Volume to Capacity	0.00	0.04	0.08			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	9.4			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		14.2%		ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	1	174	46	1	94
Future Volume (Veh/h)	16	1	174	46	1	94
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.70	0.70	0.81	0.81	0.72	0.72
Hourly flow rate (vph)	23	1	215	57	1	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	244			272	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	244			272	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	628	800			1303	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	272	132			
Volume Left	23	0	1			
Volume Right	1	57	0			
cSH	634	1700	1303			
Volume to Capacity	0.04	0.16	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.9	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.9	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			22.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	170	2	48	94	0	56
Future Volume (Veh/h)	170	2	48	94	0	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.74	0.74	0.88	0.88
Hourly flow rate (vph)	224	3	65	127	0	64
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			227	482	226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			227	482	226	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			95	100	92	
cM capacity (veh/h)			1353	520	819	
Direction, Lane #						
	NB 1	SB 1	NW 1			
Volume Total	227	192	64			
Volume Left	0	65	0			
Volume Right	3	0	64			
cSH	1700	1353	819			
Volume to Capacity	0.13	0.05	0.08			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.9	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			30.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	203	0	10	96	0	14
Future Volume (Veh/h)	203	0	10	96	0	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.73	0.73	0.65	0.65
Hourly flow rate (vph)	242	0	14	132	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			242	402	242	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			242	402	242	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			99	100	97	
cM capacity (veh/h)			1336	602	802	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	242	146	22			
Volume Left	0	14	0			
Volume Right	0	0	22			
cSH	1700	1336	802			
Volume to Capacity	0.14	0.01	0.03			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	0.8	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.8	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			23.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 23: Hollis St & Mayfield Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	166	5	0	92
Future Volume (Veh/h)	0	1	166	5	0	92
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	180	5	0	100
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	282	182			185	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	282	182			185	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	708	860			1390	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	1	185	100			
Volume Left	0	0	0			
Volume Right	1	5	0			
cSH	860	1700	1390			
Volume to Capacity	0.00	0.11	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd & Site Drive

2023 Build (Large Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	5	92	110	118	523
Future Volume (Veh/h)	23	5	92	110	118	523
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	46	10	184	220	236	1046
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1347	759	1282			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1347	759	1282			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	98	66			
cM capacity (veh/h)	110	406	541			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	56	404	1282			
Volume Left	46	184	0			
Volume Right	10	0	1046			
cSH	126	541	1700			
Volume to Capacity	0.44	0.34	0.75			
Queue Length 95th (ft)	49	37	0			
Control Delay (s)	54.4	10.0	0.0			
Lane LOS	F	B				
Approach Delay (s)	54.4	10.0	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization		62.7%		ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	45	288	751	258	0
Future Volume (Veh/h)	1	45	288	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	56	306	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1704	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1704	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	98	93	76			
cM capacity (veh/h)	58	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	57	1105	293			
Volume Left	1	306	0			
Volume Right	56	0	0			
cSH	622	1280	1700			
Volume to Capacity	0.09	0.24	0.17			
Queue Length 95th (ft)	8	23	0			
Control Delay (s)	11.4	5.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.4	5.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization		82.4%		ICU Level of Service	E	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	0	1	749	259	99
Future Volume (Veh/h)	68	0	1	749	259	99
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.95	0.95	0.88	0.88
Hourly flow rate (vph)	85	0	1	788	294	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1140	350	407			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1140	350	407			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	100	100			
cM capacity (veh/h)	224	697	1163			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	85	789	407			
Volume Left	85	1	0			
Volume Right	0	0	113			
cSH	224	1163	1700			
Volume to Capacity	0.38	0.00	0.24			
Queue Length 95th (ft)	42	0	0			
Control Delay (s)	30.6	0.0	0.0			
Lane LOS	D	A				
Approach Delay (s)	30.6	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			50.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	701	160	10	360	4	0	0	0	78	0	9
Future Volume (Veh/h)	1	701	160	10	360	4	0	0	0	78	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83
Hourly flow rate (vph)	1	788	180	11	396	4	0	0	0	94	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	400			968			1311	1390	398	1300	1302	878
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			968			1311	1390	398	1300	1302	878
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	100	100	32	100	97
cM capacity (veh/h)	1170			720			131	141	656	138	160	350
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	969	411	105									
Volume Left	1	11	94									
Volume Right	180	4	11									
cSH	1170	720	147									
Volume to Capacity	0.00	0.02	0.71									
Queue Length 95th (ft)	0	1	104									
Control Delay (s)	0.0	0.5	74.6									
Lane LOS	A	A	F									
Approach Delay (s)	0.0	0.5	74.6									
Approach LOS			F									
Intersection Summary												
Average Delay			5.4									
Intersection Capacity Utilization			58.6%	ICU Level of Service						B		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	33	19	131	96	331	31	66	722	31	
Future Volume (Veh/h)	0	0	0	33	19	131	96	331	31	66	722	31	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.87	0.87	0.87	0.94	0.94	0.94	
Hourly flow rate (vph)	0	0	0	44	25	175	110	380	36	70	768	33	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1642	1559	398	1542	1560	784	801				416		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1642	1559	398	1542	1560	784	801				416		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	46	73	56	87				94		
cM capacity (veh/h)	31	92	656	81	92	396	822				1154		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	244	526	871										
Volume Left	44	110	70										
Volume Right	175	36	33										
cSH	248	822	1154										
Volume to Capacity	0.98	0.13	0.06										
Queue Length 95th (ft)	233	12	5										
Control Delay (s)	96.4	3.5	1.5										
Lane LOS	F	A	A										
Approach Delay (s)	96.4	3.5	1.5										
Approach LOS	F												
Intersection Summary													
Average Delay			16.3										
Intersection Capacity Utilization			58.3%	ICU Level of Service		B							
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	45	288	751	258	0
Future Volume (Veh/h)	1	45	288	751	258	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.94	0.94	0.88	0.88
Hourly flow rate (vph)	1	56	306	799	293	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1704	293	293			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1704	293	293			
tC, single (s)	6.9	6.2	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.3	2.2			
p0 queue free %	98	93	76			
cM capacity (veh/h)	58	751	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	57	1105	293			
Volume Left	1	306	0			
Volume Right	56	0	0			
cSH	622	1280	1700			
Volume to Capacity	0.09	0.24	0.17			
Queue Length 95th (ft)	8	23	0			
Control Delay (s)	11.4	5.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.4	5.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization			Err%	ICU Level of Service	H	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	8	31	87	369	36
Future Volume (Veh/h)	27	8	31	87	369	36
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.93	0.93
Hourly flow rate (vph)	31	9	36	101	397	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	590	416	436			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	590	416	436			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	99	97			
cM capacity (veh/h)	459	613	1134			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	40	137	436			
Volume Left	31	36	0			
Volume Right	9	0	39			
cSH	486	1134	1700			
Volume to Capacity	0.08	0.03	0.26			
Queue Length 95th (ft)	7	2	0			
Control Delay (s)	13.1	2.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.1	2.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			41.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	34	35	0	67	0	1	0	0	0	0	0
Future Volume (Veh/h)	0	34	35	0	67	0	1	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	68	70	0	134	0	2	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	134			138			237	237	103	237	272	134
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134			138			237	237	103	237	272	134
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1463			1458			722	667	957	722	638	920
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	138	134	2	0								
Volume Left	0	0	2	0								
Volume Right	70	0	0	0								
cSH	1463	1458	722	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (ft)	0	0	0	0								
Control Delay (s)	0.0	0.0	10.0	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.0	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			13.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	32	16	53	36	0
Future Volume (Veh/h)	0	32	16	53	36	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.70	0.70	0.97	0.97	0.71	0.71
Hourly flow rate (vph)	0	46	16	55	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	71				90	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71				90	44
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1542				916	1032
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	46	71	51			
Volume Left	0	0	51			
Volume Right	0	55	0			
cSH	1542	1700	916			
Volume to Capacity	0.00	0.04	0.06			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.0	0.0	9.2			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			14.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	1	174	32	1	94
Future Volume (Veh/h)	15	1	174	32	1	94
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.70	0.70	0.81	0.81	0.72	0.72
Hourly flow rate (vph)	21	1	215	40	1	131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	368	235			255	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	368	235			255	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	636	809			1322	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	22	255	132			
Volume Left	21	0	1			
Volume Right	1	40	0			
cSH	642	1700	1322			
Volume to Capacity	0.03	0.15	0.00			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	10.8	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.8	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		21.1%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	170	2	34	94	0	55
Future Volume (Veh/h)	170	2	34	94	0	55
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.74	0.74	0.88	0.88
Hourly flow rate (vph)	224	3	46	127	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			227	444	226	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			227	444	226	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			97	100	92	
cM capacity (veh/h)			1353	555	819	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	227	173	63			
Volume Left	0	46	0			
Volume Right	3	0	63			
cSH	1700	1353	819			
Volume to Capacity	0.13	0.03	0.08			
Queue Length 95th (ft)	0	3	6			
Control Delay (s)	0.0	2.3	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.3	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			29.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	2	52	110	118	259
Future Volume (Veh/h)	8	2	52	110	118	259
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	16	4	104	220	236	518
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	923	495	754			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	923	495	754			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	88			
cM capacity (veh/h)	263	575	856			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	324	754			
Volume Left	16	104	0			
Volume Right	4	0	518			
cSH	295	856	1700			
Volume to Capacity	0.07	0.12	0.44			
Queue Length 95th (ft)	5	10	0			
Control Delay (s)	18.1	4.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.1	4.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			44.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	308	18	175	73	0
Future Volume (Veh/h)	0	308	18	175	73	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.76	0.76	0.82	0.82
Hourly flow rate (vph)	0	350	24	230	89	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	367	89	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	367	89	89			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	64	98			
cM capacity (veh/h)	627	975	1519			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	350	254	89			
Volume Left	0	24	0			
Volume Right	350	0	0			
cSH	975	1519	1700			
Volume to Capacity	0.36	0.02	0.05			
Queue Length 95th (ft)	41	1	0			
Control Delay (s)	10.7	0.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.7	0.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			42.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	0	0	178	69	13
Future Volume (Veh/h)	63	0	0	178	69	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.78	0.78	0.87	0.87
Hourly flow rate (vph)	126	0	0	228	79	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	86	94			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	86	94			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	100	100			
cM capacity (veh/h)	683	978	1513			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	126	228	94			
Volume Left	126	0	0			
Volume Right	0	0	15			
cSH	683	1700	1700			
Volume to Capacity	0.18	0.13	0.06			
Queue Length 95th (ft)	17	0	0			
Control Delay (s)	11.5	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	11.5	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			19.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	173	57	4	79	1	0	0	0	15	0	3
Future Volume (Veh/h)	0	173	57	4	79	1	0	0	0	15	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.79	0.79	0.79	0.92	0.92	0.92	0.53	0.53	0.53
Hourly flow rate (vph)	0	228	75	5	100	1	0	0	0	28	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			303			382	414	100	376	376	266
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			303			382	414	100	376	376	266
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	99
cM capacity (veh/h)	1504			1269			573	530	960	583	556	778
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	303	106	34									
Volume Left	0	5	28									
Volume Right	75	1	6									
cSH	1504	1269	610									
Volume to Capacity	0.00	0.00	0.06									
Queue Length 95th (ft)	0	0	4									
Control Delay (s)	0.0	0.4	11.2									
Lane LOS		A	B									
Approach Delay (s)	0.0	0.4	11.2									
Approach LOS			B									
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization			22.6%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	11	12	37	22	70	4	14	192	32	
Future Volume (Veh/h)	0	0	0	11	12	37	22	70	4	14	192	32	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.79	0.79	0.79	0.88	0.88	0.88	0.78	0.78	0.78	
Hourly flow rate (vph)	0	0	0	14	15	47	25	80	5	18	246	41	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	466	456	82	435	438	266	287				85		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	466	456	82	435	438	266	287				85		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	97	97	94	98				99		
cM capacity (veh/h)	457	488	983	522	500	770	1287				1524		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	76	110	305										
Volume Left	14	25	18										
Volume Right	47	5	41										
cSH	1245	1287	1524										
Volume to Capacity	0.06	0.02	0.01										
Queue Length 95th (ft)	5	1	1										
Control Delay (s)	10.9	1.9	0.5										
Lane LOS	B	A	A										
Approach Delay (s)	10.9	1.9	0.5										
Approach LOS	B												
Intersection Summary													
Average Delay			2.5										
Intersection Capacity Utilization			23.6%	ICU Level of Service	A								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	308	18	175	73	0
Future Volume (Veh/h)	0	308	18	175	73	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.76	0.76	0.82	0.82
Hourly flow rate (vph)	0	350	24	230	89	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	367	89	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	367	89	89			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	64	98			
cM capacity (veh/h)	627	975	1519			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	350	254	89			
Volume Left	0	24	0			
Volume Right	350	0	0			
cSH	975	1519	1700			
Volume to Capacity	0.36	0.02	0.05			
Queue Length 95th (ft)	41	1	0			
Control Delay (s)	10.7	0.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.7	0.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization		29.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	4	1	3	365	23	11
Future Volume (Veh/h)	4	1	3	365	23	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.63	0.63	0.53	0.53	0.65	0.65
Hourly flow rate (vph)	6	2	6	689	35	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	744	44	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	744	44	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	383	1032	1567			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	8	695	52			
Volume Left	6	6	0			
Volume Right	2	0	17			
cSH	455	1567	1700			
Volume to Capacity	0.02	0.00	0.03			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	13.1	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.1	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			31.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	5	0	0	11	0	46	0	0	0	0	0
Future Volume (Veh/h)	0	5	0	0	11	0	46	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	10	0	0	22	0	92	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			10			32	32	10	32	32	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			10			32	32	10	32	32	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			91	100	100	100	100	100
cM capacity (veh/h)	1607			1623			981	865	1077	981	865	1061
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	22	92	0								
Volume Left	0	0	92	0								
Volume Right	0	0	0	0								
cSH	1607	1623	981	1700								
Volume to Capacity	0.00	0.00	0.09	0.00								
Queue Length 95th (ft)	0	0	8	0								
Control Delay (s)	0.0	0.0	9.1	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.1	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			6.7									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	2	30	31	3	0
Future Volume (Veh/h)	0	2	30	31	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.50	0.81	0.81	0.75	0.75
Hourly flow rate (vph)	0	4	37	38	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	75				60	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				60	56
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1537				952	1016
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	4	75	4			
Volume Left	0	0	4			
Volume Right	0	38	0			
cSH	1537	1700	952			
Volume to Capacity	0.00	0.04	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	8.8			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		13.5%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	0	38	2	0	26
Future Volume (Veh/h)	30	0	38	2	0	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.71	0.71	0.86	0.86
Hourly flow rate (vph)	60	0	54	3	0	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	86	56			57	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	56			57	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	921	1017			1560	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	60	57	30			
Volume Left	60	0	0			
Volume Right	0	3	0			
cSH	921	1700	1560			
Volume to Capacity	0.07	0.03	0.00			
Queue Length 95th (ft)	5	0	0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	40	0	3	27	0	31
Future Volume (Veh/h)	40	0	3	27	0	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.75	0.75	0.58	0.58
Hourly flow rate (vph)	52	0	4	36	0	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			52	96	52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			52	96	52	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	95	
cM capacity (veh/h)			1567	906	1021	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	52	40	53			
Volume Left	0	4	0			
Volume Right	0	0	53			
cSH	1700	1567	1021			
Volume to Capacity	0.03	0.00	0.05			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.0	0.7	8.7			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			13.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Typical Concert)
 Friday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	40	0	3	56	0	3
Future Volume (Veh/h)	40	0	3	56	0	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.65	0.65	0.75	0.75
Hourly flow rate (vph)	58	0	5	86	0	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58	154	58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58	154	58	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	100	
cM capacity (veh/h)			1559	840	1014	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	58	91	4			
Volume Left	0	5	0			
Volume Right	0	0	4			
cSH	1700	1559	1014			
Volume to Capacity	0.03	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.4	8.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.4	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			15.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Old Ayer Rd

2023 Build (Typical Concert)
Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	345	69	1	23	23	4
Future Volume (Veh/h)	345	69	1	23	23	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	690	138	2	46	46	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	50	54			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	50	54			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	23	86	100			
cM capacity (veh/h)	898	1018	1551			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	828	48	54			
Volume Left	690	2	0			
Volume Right	138	0	8			
cSH	916	1551	1700			
Volume to Capacity	0.90	0.00	0.03			
Queue Length 95th (ft)	324	0	0			
Control Delay (s)	32.8	0.3	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.8	0.3	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			29.2			
Intersection Capacity Utilization		33.3%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	0	0	178	69	14
Future Volume (Veh/h)	100	0	0	178	69	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.78	0.78	0.87	0.87
Hourly flow rate (vph)	200	0	0	228	79	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	315	87	95			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315	87	95			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	71	100	100			
cM capacity (veh/h)	682	977	1512			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	200	228	95			
Volume Left	200	0	0			
Volume Right	0	0	16			
cSH	682	1700	1700			
Volume to Capacity	0.29	0.13	0.06			
Queue Length 95th (ft)	30	0	0			
Control Delay (s)	12.5	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	12.5	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization		21.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	184	65	4	80	1	0	0	0	16	0	3
Future Volume (Veh/h)	0	184	65	4	80	1	0	0	0	16	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.79	0.79	0.79	0.92	0.92	0.92	0.53	0.53	0.53
Hourly flow rate (vph)	0	242	86	5	101	1	0	0	0	30	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	102			328			402	440	102	396	397	285
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	102			328			402	440	102	396	397	285
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	99
cM capacity (veh/h)	1503			1243			556	512	959	565	541	759
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	328	107	36									
Volume Left	0	5	30									
Volume Right	86	1	6									
cSH	1503	1243	590									
Volume to Capacity	0.00	0.00	0.06									
Queue Length 95th (ft)	0	0	5									
Control Delay (s)	0.0	0.4	11.5									
Lane LOS		A	B									
Approach Delay (s)	0.0	0.4	11.5									
Approach LOS			B									
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization		23.6%		ICU Level of Service						A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	12	12	37	22	71	4	14	210	50	
Future Volume (Veh/h)	0	0	0	12	12	37	22	71	4	14	210	50	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.79	0.79	0.79	0.88	0.88	0.88	0.78	0.78	0.78	
Hourly flow rate (vph)	0	0	0	15	15	47	25	81	5	18	269	64	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	502	502	84	470	473	301	333				86		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	502	502	84	470	473	301	333				86		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	97	97	94	98				99		
cM capacity (veh/h)	431	459	981	494	477	736	1238				1523		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	77	111	351										
Volume Left	15	25	18										
Volume Right	47	5	64										
cSH	1206	1238	1523										
Volume to Capacity	0.06	0.02	0.01										
Queue Length 95th (ft)	5	2	1										
Control Delay (s)	11.3	1.9	0.5										
Lane LOS	B	A	A										
Approach Delay (s)	11.3	1.9	0.5										
Approach LOS	B												
Intersection Summary													
Average Delay			2.3										
Intersection Capacity Utilization			25.7%	ICU Level of Service	A								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	545	28	175	73	0
Future Volume (Veh/h)	0	545	28	175	73	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.76	0.76	0.82	0.82
Hourly flow rate (vph)	0	619	37	230	89	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	393	89	89			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	393	89	89			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	36	98			
cM capacity (veh/h)	600	975	1519			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	619	267	89			
Volume Left	0	37	0			
Volume Right	619	0	0			
cSH	975	1519	1700			
Volume to Capacity	0.64	0.02	0.05			
Queue Length 95th (ft)	118	2	0			
Control Delay (s)	14.9	1.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.9	1.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			9.8			
Intersection Capacity Utilization		44.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	0	100	545	0	14
Future Volume (Veh/h)	28	0	100	545	0	14
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.76	0.85	0.50	0.88	0.87	0.87
Hourly flow rate (vph)	37	0	200	619	0	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	526	510			819	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	526	510			819	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	516	568			818	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	37	819	16			
Volume Left	37	0	0			
Volume Right	0	619	0			
cSH	516	1700	1700			
Volume to Capacity	0.07	0.48	0.01			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	12.5	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	12.5	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		48.9%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	3	3	639	34	11
Future Volume (Veh/h)	4	3	3	639	34	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.63	0.63	0.53	0.53	0.65	0.65
Hourly flow rate (vph)	6	5	6	1206	52	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1278	60	69			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1278	60	69			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	184	1010	1545			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	11	1212	69			
Volume Left	6	6	0			
Volume Right	5	0	17			
cSH	293	1545	1700			
Volume to Capacity	0.04	0.00	0.04			
Queue Length 95th (ft)	3	0	0			
Control Delay (s)	17.7	0.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.7	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			46.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	7	0	0	11	0	83	0	0	0	0	0
Future Volume (Veh/h)	0	7	0	0	11	0	83	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	14	0	0	22	0	166	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			14			36	36	14	36	36	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			14			36	36	14	36	36	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			83	100	100	100	100	100
cM capacity (veh/h)	1607			1617			975	860	1072	975	860	1061
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	22	166	0								
Volume Left	0	0	166	0								
Volume Right	0	0	0	0								
cSH	1607	1617	975	1700								
Volume to Capacity	0.00	0.00	0.17	0.00								
Queue Length 95th (ft)	0	0	15	0								
Control Delay (s)	0.0	0.0	9.4	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.4	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			7.8									
Intersection Capacity Utilization			14.6%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	0	3	48	49	4	0
Future Volume (Veh/h)	0	3	48	49	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.50	0.81	0.81	0.75	0.75
Hourly flow rate (vph)	0	6	59	60	5	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119				95	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119				95	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1482				909	975
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	6	119	5			
Volume Left	0	0	5			
Volume Right	0	60	0			
cSH	1482	1700	909			
Volume to Capacity	0.00	0.07	0.01			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	9.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization		15.5%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	0	38	3	0	26
Future Volume (Veh/h)	48	0	38	3	0	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.71	0.71	0.86	0.86
Hourly flow rate (vph)	96	0	54	4	0	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	86	56			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	56			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	920	1016			1559	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	96	58	30			
Volume Left	96	0	0			
Volume Right	0	4	0			
cSH	920	1700	1559			
Volume to Capacity	0.10	0.03	0.00			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	9.4	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.4	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			4.9			
Intersection Capacity Utilization			13.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	40	0	4	27	0	49
Future Volume (Veh/h)	40	0	4	27	0	49
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.75	0.75	0.58	0.58
Hourly flow rate (vph)	52	0	5	36	0	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			52	98	52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			52	98	52	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	92	
cM capacity (veh/h)			1567	903	1021	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	52	41	84			
Volume Left	0	5	0			
Volume Right	0	0	84			
cSH	1700	1567	1021			
Volume to Capacity	0.03	0.00	0.08			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.9	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.9	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization			14.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	40	0	3	74	0	3
Future Volume (Veh/h)	40	0	3	74	0	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.65	0.65	0.75	0.75
Hourly flow rate (vph)	58	0	5	114	0	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58	182	58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58	182	58	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	100	100	
cM capacity (veh/h)			1559	809	1014	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	58	119	4			
Volume Left	0	5	0			
Volume Right	0	0	4			
cSH	1700	1559	1014			
Volume to Capacity	0.03	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.3	8.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.3	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			16.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 23: Hollis St & Mayfield Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	68	1	1	19
Future Volume (Veh/h)	0	0	68	1	1	19
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	74	1	1	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98	74			75	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	74			75	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	901	987			1537	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	75	22			
Volume Left	0	0	1			
Volume Right	0	1	0			
cSH	1700	1700	1537			
Volume to Capacity	0.00	0.04	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	0.0	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			7.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd

2023 Build (Large Concert)
 Friday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	619	124	3	23	20	17
Future Volume (Veh/h)	619	124	3	23	20	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.50	0.50
Hourly flow rate (vph)	1238	248	3	26	40	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	89	57	74			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	89	57	74			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	75	100			
cM capacity (veh/h)	910	1009	1526			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	1486	29	74			
Volume Left	1238	3	0			
Volume Right	248	0	34			
cSH	925	1526	1700			
Volume to Capacity	1.61	0.00	0.04			
Queue Length 95th (ft)	1933	0	0			
Control Delay (s)	291.7	0.8	0.0			
Lane LOS	F	A				
Approach Delay (s)	291.7	0.8	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			272.8			
Intersection Capacity Utilization			52.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build
 Monday Evening Peak Hour (Exiting)



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	3	112	115	809	274	0
Future Volume (Veh/h)	3	112	115	809	274	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	158	139	975	330	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1583	330	330			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1583	330	330			
tC, single (s)	6.7	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.8	3.3	2.2			
p0 queue free %	96	78	89			
cM capacity (veh/h)	90	716	1241			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	162	1114	330			
Volume Left	4	139	0			
Volume Right	158	0	0			
cSH	611	1241	1700			
Volume to Capacity	0.27	0.11	0.19			
Queue Length 95th (ft)	27	9	0			
Control Delay (s)	13.0	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.0	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			80.5%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	487	58	408	310	0
Future Volume (Veh/h)	0	487	58	408	310	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	0	686	67	474	352	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	960	352	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	352	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	1	94			
cM capacity (veh/h)	271	696	1218			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	686	541	352			
Volume Left	0	67	0			
Volume Right	686	0	0			
cSH	696	1218	1700			
Volume to Capacity	0.99	0.06	0.21			
Queue Length 95th (ft)	385	4	0			
Control Delay (s)	54.9	1.5	0.0			
Lane LOS	F	A				
Approach Delay (s)	54.9	1.5	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			24.4			
Intersection Capacity Utilization			81.2%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	114	0	0	399	311	59
Future Volume (Veh/h)	114	0	0	399	311	59
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	175	0	0	464	353	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	850	386	420			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	850	386	420			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	47	100	100			
cM capacity (veh/h)	333	666	1150			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	175	464	420			
Volume Left	175	0	0			
Volume Right	0	0	67			
cSH	333	1700	1700			
Volume to Capacity	0.53	0.27	0.25			
Queue Length 95th (ft)	72	0	0			
Control Delay (s)	27.1	0.0	0.0			
Lane LOS	D					
Approach Delay (s)	27.1	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization		34.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	423	112	17	342	1	0	0	0	92	2	12
Future Volume (Veh/h)	6	423	112	17	342	1	0	0	0	92	2	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.92	0.92	0.92	0.76	0.76	0.76
Hourly flow rate (vph)	7	516	137	18	364	1	0	0	0	121	3	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	365			653			1016	1068	364	999	1000	584
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365			653			1016	1068	364	999	1000	584
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	100	45	99	97
cM capacity (veh/h)	1205			943			205	218	685	219	239	515
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	660	383	140									
Volume Left	7	18	121									
Volume Right	137	1	16									
cSH	1205	943	235									
Volume to Capacity	0.01	0.02	0.60									
Queue Length 95th (ft)	0	1	86									
Control Delay (s)	0.2	0.6	40.7									
Lane LOS	A	A	E									
Approach Delay (s)	0.2	0.6	40.7									
Approach LOS			E									
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			43.7%	ICU Level of Service						A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	26	19	110	110	334	9	20	424	74	
Future Volume (Veh/h)	0	0	0	26	19	110	110	334	9	20	424	74	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.84	0.84	0.84	0.71	0.71	0.71	
Hourly flow rate (vph)	0	0	0	27	20	115	131	398	11	28	597	104	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type						None			None				
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1438	1422	404	1370	1376	649	701					409	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1438	1422	404	1370	1376	649	701					409	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1	
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2	
p0 queue free %	100	100	100	75	84	76	85					98	
cM capacity (veh/h)	65	115	651	109	122	473	901					1161	
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	162	540	729										
Volume Left	27	131	28										
Volume Right	115	11	104										
cSH	395	901	1161										
Volume to Capacity	0.41	0.15	0.02										
Queue Length 95th (ft)	49	13	2										
Control Delay (s)	27.1	3.8	0.6										
Lane LOS	D	A	A										
Approach Delay (s)	27.1	3.8	0.6										
Approach LOS	D												
Intersection Summary													
Average Delay			4.8										
Intersection Capacity Utilization			65.5%	ICU Level of Service	C								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	487	58	408	310	0
Future Volume (Veh/h)	0	487	58	408	310	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	0	686	67	474	352	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	960	352	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	352	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	1	94			
cM capacity (veh/h)	271	696	1218			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	686	541	352			
Volume Left	0	67	0			
Volume Right	686	0	0			
cSH	696	1218	1700			
Volume to Capacity	0.99	0.06	0.21			
Queue Length 95th (ft)	385	4	0			
Control Delay (s)	54.9	1.5	0.0			
Lane LOS	F	A				
Approach Delay (s)	54.9	1.5	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			24.4			
Intersection Capacity Utilization		53.1%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	9	4	558	95	25
Future Volume (Veh/h)	31	9	4	558	95	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	35	10	5	744	102	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	870	116	129			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	870	116	129			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	99	100			
cM capacity (veh/h)	324	942	1469			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	749	129			
Volume Left	35	5	0			
Volume Right	10	0	27			
cSH	379	1469	1700			
Volume to Capacity	0.12	0.00	0.08			
Queue Length 95th (ft)	10	0	0			
Control Delay (s)	15.8	0.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.8	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		42.6%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	41	4	0	27	0	68	0	0	0	0	0
Future Volume (Veh/h)	0	41	4	0	27	0	68	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	82	8	0	54	0	136	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	54			90			140	140	86	140	144	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			90			140	140	86	140	144	54
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			84	100	100	100	100	100
cM capacity (veh/h)	1564			1518			835	755	978	835	751	1019
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	90	54	136	0								
Volume Left	0	0	136	0								
Volume Right	8	0	0	0								
cSH	1564	1518	835	1700								
Volume to Capacity	0.00	0.00	0.16	0.00								
Queue Length 95th (ft)	0	0	15	0								
Control Delay (s)	0.0	0.0	10.2	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.2	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			4.9									
Intersection Capacity Utilization			13.8%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	0	50	50	45	26	0
Future Volume (Veh/h)	0	50	50	45	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.93	0.93	0.72	0.72
Hourly flow rate (vph)	0	63	54	48	36	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	102				141	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102				141	78
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1503				857	988

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	63	102	36
Volume Left	0	0	36
Volume Right	0	48	0
cSH	1503	1700	857
Volume to Capacity	0.00	0.06	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	1	74	17	1	83
Future Volume (Veh/h)	48	1	74	17	1	83
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.69	0.69	0.71	0.71
Hourly flow rate (vph)	55	1	107	25	1	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	120			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	120			132	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	754	938			1466	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	56	132	118			
Volume Left	55	0	1			
Volume Right	1	25	0			
cSH	756	1700	1466			
Volume to Capacity	0.07	0.08	0.00			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	10.1	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization		15.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	72	0	28	83	0	43
Future Volume (Veh/h)	72	0	28	83	0	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.66	0.66	0.74	0.74	0.75	0.75
Hourly flow rate (vph)	109	0	38	112	0	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			109	297	109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			109	297	109	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			97	100	94	
cM capacity (veh/h)			1494	681	950	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	109	150	57			
Volume Left	0	38	0			
Volume Right	0	0	57			
cSH	1700	1494	950			
Volume to Capacity	0.06	0.03	0.06			
Queue Length 95th (ft)	0	2	5			
Control Delay (s)	0.0	2.0	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.0	9.0			
Approach LOS		A	A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			22.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	83	0	4	119	0	7
Future Volume (Veh/h)	83	0	4	119	0	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.79	0.79	0.58	0.58
Hourly flow rate (vph)	106	0	5	151	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		267	106
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		267	106
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1498		724	954
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	106	156	12			
Volume Left	0	5	0			
Volume Right	0	0	12			
cSH	1700	1498	954			
Volume to Capacity	0.06	0.00	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.3	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.3	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			19.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 26: Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	506	101	5	56	78	26
Future Volume (Veh/h)	506	101	5	56	78	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	1012	202	10	112	156	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	182	208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	182	208			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	77	99			
cM capacity (veh/h)	674	861	1363			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	1214	122	208			
Volume Left	1012	10	0			
Volume Right	202	0	52			
cSH	699	1363	1700			
Volume to Capacity	1.74	0.01	0.12			
Queue Length 95th (ft)	1770	1	0			
Control Delay (s)	353.3	0.7	0.0			
Lane LOS	F	A				
Approach Delay (s)	353.3	0.7	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			277.9			
Intersection Capacity Utilization		47.9%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	114	0	0	399	311	59
Future Volume (Veh/h)	114	0	0	399	311	59
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.65	0.65	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	175	0	0	464	353	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	850	386	420			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	850	386	420			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	47	100	100			
cM capacity (veh/h)	333	666	1150			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	175	464	420			
Volume Left	175	0	0			
Volume Right	0	0	67			
cSH	333	1700	1700			
Volume to Capacity	0.53	0.27	0.25			
Queue Length 95th (ft)	72	0	0			
Control Delay (s)	27.1	0.0	0.0			
Lane LOS	D					
Approach Delay (s)	27.1	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization		34.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	423	112	17	342	1	0	0	0	92	2	12
Future Volume (Veh/h)	6	423	112	17	342	1	0	0	0	92	2	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.94	0.94	0.94	0.92	0.92	0.92	0.76	0.76	0.76
Hourly flow rate (vph)	7	516	137	18	364	1	0	0	0	121	3	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	365			653			1016	1068	364	999	1000	584
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365			653			1016	1068	364	999	1000	584
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	100	45	99	97
cM capacity (veh/h)	1205			943			205	218	685	219	239	515
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	660	383	140									
Volume Left	7	18	121									
Volume Right	137	1	16									
cSH	1205	943	235									
Volume to Capacity	0.01	0.02	0.60									
Queue Length 95th (ft)	0	1	86									
Control Delay (s)	0.2	0.6	40.7									
Lane LOS	A	A	E									
Approach Delay (s)	0.2	0.6	40.7									
Approach LOS			E									
Intersection Summary												
Average Delay			5.1									
Intersection Capacity Utilization			43.7%	ICU Level of Service						A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	0	26	19	110	110	334	9	20	424	74	
Future Volume (Veh/h)	0	0	0	26	19	110	110	334	9	20	424	74	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.84	0.84	0.84	0.71	0.71	0.71	
Hourly flow rate (vph)	0	0	0	27	20	115	131	398	11	28	597	104	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)						2							
Median type							None			None			
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	1438	1422	404	1370	1376	649	701				409		
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1438	1422	404	1370	1376	649	701				409		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1		
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2		
p0 queue free %	100	100	100	75	84	76	85				98		
cM capacity (veh/h)	65	115	651	109	122	473	901				1161		
Direction, Lane #													
	WB 1	SE 1	NW 1										
Volume Total	162	540	729										
Volume Left	27	131	28										
Volume Right	115	11	104										
cSH	395	901	1161										
Volume to Capacity	0.41	0.15	0.02										
Queue Length 95th (ft)	49	13	2										
Control Delay (s)	27.1	3.8	0.6										
Lane LOS	D	A	A										
Approach Delay (s)	27.1	3.8	0.6										
Approach LOS	D												
Intersection Summary													
Average Delay			4.8										
Intersection Capacity Utilization			65.5%	ICU Level of Service	C								
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	487	58	408	310	0
Future Volume (Veh/h)	0	487	58	408	310	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.86	0.86	0.88	0.88
Hourly flow rate (vph)	0	686	67	474	352	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	960	352	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	352	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	1	94			
cM capacity (veh/h)	271	696	1218			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	686	541	352			
Volume Left	0	67	0			
Volume Right	686	0	0			
cSH	696	1218	1700			
Volume to Capacity	0.99	0.06	0.21			
Queue Length 95th (ft)	385	4	0			
Control Delay (s)	54.9	1.5	0.0			
Lane LOS	F	A				
Approach Delay (s)	54.9	1.5	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			24.4			
Intersection Capacity Utilization		53.1%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	58	0	114	487	0	59
Future Volume (Veh/h)	58	0	114	487	0	59
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.85	0.65	0.71	0.81	0.88
Hourly flow rate (vph)	67	0	175	686	0	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	585	518			861	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	585	518			861	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	86	100			100	
cM capacity (veh/h)	477	562			789	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	67	861	67			
Volume Left	67	0	0			
Volume Right	0	686	0			
cSH	477	1700	1700			
Volume to Capacity	0.14	0.51	0.04			
Queue Length 95th (ft)	12	0	0			
Control Delay (s)	13.8	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	13.8	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			46.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	13	4	558	95	25
Future Volume (Veh/h)	31	13	4	558	95	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.75	0.75	0.93	0.93
Hourly flow rate (vph)	35	15	5	744	102	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	870	116	129			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	870	116	129			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	98	100			
cM capacity (veh/h)	324	942	1469			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	50	749	129			
Volume Left	35	5	0			
Volume Right	15	0	27			
cSH	403	1469	1700			
Volume to Capacity	0.12	0.00	0.08			
Queue Length 95th (ft)	11	0	0			
Control Delay (s)	15.2	0.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.2	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		42.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	45	0	0	27	0	68	0	0	0	0	0
Future Volume (Veh/h)	0	45	0	0	27	0	68	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	90	0	0	54	0	136	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	54			90			144	144	90	144	144	54
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			90			144	144	90	144	144	54
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			84	100	100	100	100	100
cM capacity (veh/h)	1564			1518			830	751	973	830	751	1019
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	90	54	136	0								
Volume Left	0	0	136	0								
Volume Right	0	0	0	0								
cSH	1564	1518	830	1700								
Volume to Capacity	0.00	0.00	0.16	0.00								
Queue Length 95th (ft)	0	0	15	0								
Control Delay (s)	0.0	0.0	10.2	0.0								
Lane LOS			B	A								
Approach Delay (s)	0.0	0.0	10.2	0.0								
Approach LOS			B	A								
Intersection Summary												
Average Delay			4.9									
Intersection Capacity Utilization			13.8%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↶	↷		↶	
Traffic Volume (veh/h)	0	50	50	45	26	0
Future Volume (Veh/h)	0	50	50	45	26	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.93	0.93	0.72	0.72
Hourly flow rate (vph)	0	63	54	48	36	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	102				141	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102				141	78
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1503				857	988

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	63	102	36
Volume Left	0	0	36
Volume Right	0	48	0
cSH	1503	1700	857
Volume to Capacity	0.00	0.06	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.4
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	1	74	17	1	83
Future Volume (Veh/h)	48	1	74	17	1	83
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.69	0.69	0.71	0.71
Hourly flow rate (vph)	55	1	107	25	1	117
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	120			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	120			132	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	754	938			1466	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	56	132	118			
Volume Left	55	0	1			
Volume Right	1	25	0			
cSH	756	1700	1466			
Volume to Capacity	0.07	0.08	0.00			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	10.1	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			15.2%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	72	0	28	83	0	43
Future Volume (Veh/h)	72	0	28	83	0	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.66	0.66	0.74	0.74	0.75	0.75
Hourly flow rate (vph)	109	0	38	112	0	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			109	297	109	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			109	297	109	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			97	100	94	
cM capacity (veh/h)			1494	681	950	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	109	150	57			
Volume Left	0	38	0			
Volume Right	0	0	57			
cSH	1700	1494	950			
Volume to Capacity	0.06	0.03	0.06			
Queue Length 95th (ft)	0	2	5			
Control Delay (s)	0.0	2.0	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.0	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			22.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

	↑	↗	↘	↓	↖	↙
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↕			↕	↕	
Traffic Volume (veh/h)	83	0	4	119	0	7
Future Volume (Veh/h)	83	0	4	119	0	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.79	0.79	0.58	0.58
Hourly flow rate (vph)	106	0	5	151	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		267	106
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		267	106
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			1498		724	954
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	106	156	12			
Volume Left	0	5	0			
Volume Right	0	0	12			
cSH	1700	1498	954			
Volume to Capacity	0.06	0.00	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.3	8.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.3	8.8			
Approach LOS			A			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			19.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 23: Hollis St & Mayfield Rd

2023 Build (Summer Festival)
 Saturday Evening Peak Hour (Exiting)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	0	115	0	1	103
Future Volume (Veh/h)	3	0	115	0	1	103
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	125	0	1	112
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	239	125			125	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	239	125			125	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	749	926			1462	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	3	125	113			
Volume Left	3	0	1			
Volume Right	0	0	0			
cSH	749	1700	1462			
Volume to Capacity	0.00	0.07	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	9.8	0.0	0.1			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	0.1			
Approach LOS	A					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			16.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Old Ayer Rd

2023 Build (Summer Festival)
Saturday Evening Peak Hour (Exiting)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	506	101	5	56	78	30
Future Volume (Veh/h)	506	101	5	56	78	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	1012	202	10	112	156	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318	186	216			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	186	216			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	76	99			
cM capacity (veh/h)	670	856	1354			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	1214	122	216			
Volume Left	1012	10	0			
Volume Right	202	0	60			
cSH	695	1354	1700			
Volume to Capacity	1.75	0.01	0.13			
Queue Length 95th (ft)	1781	1	0			
Control Delay (s)	357.5	0.7	0.0			
Lane LOS	F	A				
Approach Delay (s)	357.5	0.7	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			279.7			
Intersection Capacity Utilization			47.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	125	311	508	552	0
Future Volume (Veh/h)	5	125	311	508	552	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.88	0.88	0.93	0.93
Hourly flow rate (vph)	7	167	353	577	594	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1877	594	594			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1877	594	594			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	67	64			
cM capacity (veh/h)	51	507	992			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	174	930	594			
Volume Left	7	353	0			
Volume Right	167	0	0			
cSH	373	992	1700			
Volume to Capacity	0.47	0.36	0.35			
Queue Length 95th (ft)	60	41	0			
Control Delay (s)	22.8	7.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	22.8	7.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			91.0%	ICU Level of Service	F	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	0	1	517	552	120
Future Volume (Veh/h)	76	0	1	517	552	120
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.93	0.93	0.96	0.96
Hourly flow rate (vph)	99	0	1	556	575	125
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1196	638	700			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1196	638	700			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	52	100	100			
cM capacity (veh/h)	206	481	906			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	99	557	700			
Volume Left	99	1	0			
Volume Right	0	0	125			
cSH	206	906	1700			
Volume to Capacity	0.48	0.00	0.41			
Queue Length 95th (ft)	59	0	0			
Control Delay (s)	37.8	0.0	0.0			
Lane LOS	E	A				
Approach Delay (s)	37.8	0.0	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization		47.2%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 3: Court St/Hollis St & Main St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	495	166	12	640	7	0	0	0	141	0	16
Future Volume (Veh/h)	2	495	166	12	640	7	0	0	0	141	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.97	0.97	0.97	0.92	0.92	0.92	0.93	0.93	0.93
Hourly flow rate (vph)	2	516	173	12	660	7	0	0	0	152	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	667			689			1311	1380	664	1294	1298	602
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	667			689			1311	1380	664	1294	1298	602
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	0	100	97
cM capacity (veh/h)	932			915			130	142	461	139	161	503
Direction, Lane #												
	NB 1	SB 1	SW 1									
Volume Total	691	679	169									
Volume Left	2	12	152									
Volume Right	173	7	17									
cSH	932	915	150									
Volume to Capacity	0.00	0.01	1.13									
Queue Length 95th (ft)	0	1	231									
Control Delay (s)	0.1	0.3	171.0									
Lane LOS	A	A	F									
Approach Delay (s)	0.1	0.3	171.0									
Approach LOS			F									
Intersection Summary												
Average Delay			19.0									
Intersection Capacity Utilization			58.4%	ICU Level of Service	B							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 5: Main St & Broadmeadow Rd/Lowell Rd

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	70	23	175	188	592	42	21	508	61
Future Volume (Veh/h)	0	0	0	70	23	175	188	592	42	21	508	61
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.99	0.99	0.99	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	0	75	25	188	190	598	42	23	546	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1730	1657	619	1624	1645	579	612			640		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1730	1657	619	1624	1645	579	612			640		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	68	63	80			98		
cM capacity (veh/h)	28	77	489	69	79	515	967			954		
Direction, Lane #	WB 1	SE 1	NW 1									
Volume Total	288	830	635									
Volume Left	75	190	23									
Volume Right	188	42	66									
cSH	170	967	954									
Volume to Capacity	1.69	0.20	0.02									
Queue Length 95th (ft)	503	18	2									
Control Delay (s)	384.0	4.5	0.6									
Lane LOS	F	A	A									
Approach Delay (s)	384.0	4.5	0.6									
Approach LOS	F											
Intersection Summary												
Average Delay			65.5									
Intersection Capacity Utilization			90.8%		ICU Level of Service					E		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	125	311	508	552	0
Future Volume (Veh/h)	5	125	311	508	552	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.88	0.88	0.93	0.93
Hourly flow rate (vph)	7	167	353	577	594	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1877	594	594			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1877	594	594			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	67	64			
cM capacity (veh/h)	51	507	992			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	174	930	594			
Volume Left	7	353	0			
Volume Right	167	0	0			
cSH	373	992	1700			
Volume to Capacity	0.47	0.36	0.35			
Queue Length 95th (ft)	60	41	0			
Control Delay (s)	22.8	7.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	22.8	7.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			Err%	ICU Level of Service		H
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 11: Old Ayer Rd & Peabody St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	9	14	150	390	35
Future Volume (Veh/h)	54	9	14	150	390	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.72	0.72	0.84	0.84
Hourly flow rate (vph)	64	11	19	208	464	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	731	485	506			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	731	485	506			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	98	98			
cM capacity (veh/h)	385	586	1069			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	75	227	506			
Volume Left	64	19	0			
Volume Right	11	0	42			
cSH	405	1069	1700			
Volume to Capacity	0.19	0.02	0.30			
Queue Length 95th (ft)	17	1	0			
Control Delay (s)	15.9	0.9	0.0			
Lane LOS	C	A				
Approach Delay (s)	15.9	0.9	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			32.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 13: Site Drive/Temple Dr. & Peabody St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	62	37	0	51	0	4	0	0	0	0	0
Future Volume (Veh/h)	0	62	37	0	51	0	4	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	0	69	41	0	57	0	8	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	57			110			146	146	90	146	167	57
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			110			146	146	90	146	167	57
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1560			1493			827	749	974	827	729	1015
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	110	57	8	0								
Volume Left	0	0	8	0								
Volume Right	41	0	0	0								
cSH	1560	1493	827	1700								
Volume to Capacity	0.00	0.00	0.01	0.00								
Queue Length 95th (ft)	0	0	1	0								
Control Delay (s)	0.0	0.0	9.4	0.0								
Lane LOS			A	A								
Approach Delay (s)	0.0	0.0	9.4	0.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			0.4									
Intersection Capacity Utilization			15.5%	ICU Level of Service	A							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 14: Peabody St & Higley St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	3	48	24	33	50	1
Future Volume (Veh/h)	3	48	24	33	50	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.68	0.68	0.73	0.73
Hourly flow rate (vph)	4	60	35	49	68	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	84				128	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	84				128	60
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	100
cM capacity (veh/h)	1526				870	1012
Direction, Lane #	EB 1	WB 1	SE 1			
Volume Total	64	84	69			
Volume Left	4	0	68			
Volume Right	0	49	1			
cSH	1526	1700	871			
Volume to Capacity	0.00	0.05	0.08			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.5	0.0	9.5			
Lane LOS	A		A			
Approach Delay (s)	0.5	0.0	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization		15.0%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 15: Farmers Row & Peabody St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	1	150	47	3	130
Future Volume (Veh/h)	24	1	150	47	3	130
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.92	0.92	0.82	0.82
Hourly flow rate (vph)	32	1	163	51	4	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	188			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	188			214	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	645	859			1368	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	33	214	163			
Volume Left	32	0	4			
Volume Right	1	51	0			
cSH	650	1700	1368			
Volume to Capacity	0.05	0.13	0.00			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	10.8	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	10.8	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		20.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
 16: Farmers Row & Higley St

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	150	2	50	134	0	36
Future Volume (Veh/h)	150	2	50	134	0	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.81	0.81	0.73	0.73
Hourly flow rate (vph)	170	2	62	165	0	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			172	460	171	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			172	460	171	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			96	100	94	
cM capacity (veh/h)			1417	538	878	
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	172	227	49			
Volume Left	0	62	0			
Volume Right	2	0	49			
cSH	1700	1417	878			
Volume to Capacity	0.10	0.04	0.06			
Queue Length 95th (ft)	0	3	4			
Control Delay (s)	0.0	2.4	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.4	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			31.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 17: Farmers Row & Culver Rd

2023 Build (Summer Festival)
 Saturday Midday Peak Hour (Entering)

	↑	↗	↘	↓	↖	↗
Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	172	2	10	121	0	15
Future Volume (Veh/h)	172	2	10	121	0	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.86	0.86	0.75	0.75
Hourly flow rate (vph)	176	2	12	141	0	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			178	342		177
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178	342		177
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			99	100		98
cM capacity (veh/h)			1410	653		871
Direction, Lane #	NB 1	SB 1	NW 1			
Volume Total	178	153	20			
Volume Left	0	12	0			
Volume Right	2	0	20			
cSH	1700	1410	871			
Volume to Capacity	0.10	0.01	0.02			
Queue Length 95th (ft)	0	1	2			
Control Delay (s)	0.0	0.7	9.2			
Lane LOS			A			
Approach Delay (s)	0.0	0.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			24.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
26: Old Ayer Rd

2023 Build (Summer Festival)
Saturday Midday Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	10	55	115	125	274
Future Volume (Veh/h)	49	10	55	115	125	274
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.50	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	98	20	61	128	139	304
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	541	291	443			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541	291	443			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	97	95			
cM capacity (veh/h)	475	748	1117			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	118	189	443			
Volume Left	98	61	0			
Volume Right	20	0	304			
cSH	506	1117	1700			
Volume to Capacity	0.23	0.05	0.26			
Queue Length 95th (ft)	22	4	0			
Control Delay (s)	14.3	3.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.3	3.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		45.8%		ICU Level of Service		A
Analysis Period (min)			15			

Early/Late Peak Traffic
Operations Analysis Sheets
2024 Mitigated Build Conditions
Old Ayer Rd N at Main St
Old Ayer Rd S at Boston Rd/Main St
Old Ayer Rd S/Old Ayer Rd N

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	2	1061	354	86
Future Volume (Veh/h)	0	0	2	1061	354	86
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.83	0.83
Hourly flow rate (vph)	0	0	2	1094	427	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1577	479	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1577	479	531			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	122	591	1047			
Direction, Lane #	NB 1	SB 1				
Volume Total	1096	531				
Volume Left	2	0				
Volume Right	0	104				
cSH	1047	1700				
Volume to Capacity	0.00	0.31				
Queue Length 95th (ft)	0	0				
Control Delay (s)	0.1	0.0				
Lane LOS						
Approach Delay (s)	0.1	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			60.8%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	126	152	1056	354	0
Future Volume (Veh/h)	111	126	152	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	118	134	160	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1853	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1853	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	79	86			
cM capacity (veh/h)	71	635	1149			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	252	160	1112	421		
Volume Left	118	160	0	0		
Volume Right	134	0	0	0		
cSH	134	1149	1700	1700		
Volume to Capacity	1.88	0.14	0.65	0.25		
Queue Length 95th (ft)	489	12	0	0		
Control Delay (s)	477.0	8.6	0.0	0.0		
Lane LOS	F	A				
Approach Delay (s)	477.0	1.1		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			62.5			
Intersection Capacity Utilization			76.1%	ICU Level of Service	D	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↗
Traffic Volume (veh/h)	0	237	152	0	0	88
Future Volume (Veh/h)	0	237	152	0	0	88
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.94	0.95	0.85	0.83	0.83
Hourly flow rate (vph)	0	252	160	0	0	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	160				412	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	160				412	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	88
cM capacity (veh/h)	1432				600	890

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	252	160	106
Volume Left	0	0	0
Volume Right	0	0	106
cSH	1700	1700	890
Volume to Capacity	0.15	0.09	0.12
Queue Length 95th (ft)	0	0	10
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		20.1%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	126	152	1056	354	0
Future Volume (Veh/h)	111	126	152	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	118	134	160	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)	2					
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1853	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1853	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	79	86			
cM capacity (veh/h)	71	635	1149			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	252	160	1112	421		
Volume Left	118	160	0	0		
Volume Right	134	0	0	0		
cSH	136	1149	1700	1700		
Volume to Capacity	1.85	0.14	0.65	0.25		
Queue Length 95th (ft)	483	12	0	0		
Control Delay (s)	463.3	8.6	0.0	0.0		
Lane LOS	F	A				
Approach Delay (s)	463.3	1.1		0.0		
Approach LOS	F					
Intersection Summary						
Average Delay			60.7			
Intersection Capacity Utilization			68.4%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 2: Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	111	0	2	1061	354	86
Future Volume (Veh/h)	111	0	2	1061	354	86
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.97	0.97	0.83	0.83
Hourly flow rate (vph)	128	0	2	1094	427	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1577	479	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1577	479	531			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	100	100			
cM capacity (veh/h)	122	591	1047			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	128	1096	531			
Volume Left	128	2	0			
Volume Right	0	0	104			
cSH	122	1047	1700			
Volume to Capacity	1.05	0.00	0.31			
Queue Length 95th (ft)	183	0	0			
Control Delay (s)	165.4	0.1	0.0			
Lane LOS	F	A				
Approach Delay (s)	165.4	0.1	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			12.1			
Intersection Capacity Utilization			70.2%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Boston Rd/Main St & Old Ayer Rd

2023 Mitigated Build
 Monday Afternoon Peak Hour (Entering)

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	126	152	1056	354	0
Future Volume (Veh/h)	0	126	152	1056	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.95	0.95	0.84	0.84
Hourly flow rate (vph)	0	134	160	1112	421	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1853	421	421			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1853	421	421			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	86			
cM capacity (veh/h)	71	635	1149			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	134	160	1112	421		
Volume Left	0	160	0	0		
Volume Right	134	0	0	0		
cSH	635	1149	1700	1700		
Volume to Capacity	0.21	0.14	0.65	0.25		
Queue Length 95th (ft)	20	12	0	0		
Control Delay (s)	12.2	8.6	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	12.2	1.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			58.9%	ICU Level of Service		B
Analysis Period (min)			15			

Intersection			
Intersection Delay, s/veh	96.0		
Intersection LOS	F		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	252	1271	523
Demand Flow Rate, veh/h	253	1282	531
Vehicles Circulating, veh/h	429	118	162
Vehicles Exiting, veh/h	264	564	1238
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.2	148.0	11.2
Approach LOS	A	F	B
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	253	1282	531
Cap Entry Lane, veh/h	736	1004	961
Entry HV Adj Factor	0.996	0.991	0.984
Flow Entry, veh/h	252	1271	523
Cap Entry, veh/h	733	995	946
V/C Ratio	0.344	1.277	0.553
Control Delay, s/veh	9.2	148.0	11.2
LOS	A	F	B
95th %tile Queue, veh	2	45	3