

APPENDIX D

Capacity Analysis Outputs – Construction Assessment

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Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	617	
Potential Capacity	435	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.97
Maj. L, Min T Adj. Imp Factor.		0.98
Cap. Adj. factor due to Impeding mvmnt	0.97	0.72
Movement Capacity	422	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.97	0.97
Movement Capacity		

Result for 2 stage process:

a

y

C t

Probability of Queue free St.	1.00	1.00
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Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows	617	
Potential Capacity	435	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.97
Maj. L, Min T Adj. Imp Factor.		0.98
Cap. Adj. factor due to Impeding mvmnt	0.97	0.72
Movement Capacity	422	

Results for Two-stage process:

a

y

C t

	422
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Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)	64		233			
Movement Capacity (vph)	422		894			
Shared Lane Capacity (vph)		720				

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
C sep	422		894			
Volume	64		233			
Delay	15.0		10.4			
Q sep	0.27		0.68			
Q sep +1	1.27		1.68			
round (Qsep +1)	1		2			
n max		2				
C sh		720				
SUM C sep		1140				
n		2				
C act		1140				

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	10	11	12
Lane Config	LT			LR			
v (vph)	26		297				
C(m) (vph)	896		1140				
v/c	0.03		0.26				
95% queue length	0.09		1.05				
Control Delay	9.1		11.4				
LOS	A		B				
Approach Delay			11.4				
Approach LOS			B				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
P(oj)	0.97	1.00
v(i1), Volume for stream 2 or 5	141	
v(i2), Volume for stream 3 or 6	0	
s(i1), Saturation flow rate for stream 2 or 5	1700	
s(i2), Saturation flow rate for stream 3 or 6	1700	
P*(oj)	0.97	
d(M,LT), Delay for stream 1 or 4	9.1	
N, Number of major street through lanes	1	
d(rank,1) Delay for stream 2 or 5	0.3	

Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Conflicting Flows	1185	
Potential Capacity	174	
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmt		0.85
Mov. Cap. Adj. Imp Factor		0.88
Cap. Adj. factor due to Impeding mvmt	0.91	0.44
Movement Capacity	158	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmt		
Movement Capacity		
Probability of Queue free St.		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmt	0.85	0.85
Movement Capacity		

Result for 2 stage process:		
a		
y		
C t		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10

Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmt		
Movement Capacity		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows	1185	
Potential Capacity	174	
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmt		0.85
Mov. Cap. Adj. Imp Factor		0.88
Cap. Adj. factor due to Impeding mvmt	0.91	0.44
Movement Capacity	158	

Results for Two-stage process:		
a		
y		
C t	158	

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)	16		226			
Movement Capacity (vph)	158		448			
Shared Lane Capacity (vph)		400				

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
C sep	158		448			
Volume	16		226			
Delay	30.3		21.1			
Q sep	0.13		1.33			
Q sep +1	1.13		2.33			
round (Qsep +1)	1		2			
n max		2				
C sh		400				
SUM C sep		480				
n		2				
C act		480				

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	LT			LR				
v (vph)	110		242					
C(m) (vph)	1211		480					
v/c	0.09		0.50					
95% queue length	0.30		2.98					
Control Delay	8.3		21.8					
LOS	A		C					
Approach Delay			21.8					
Approach LOS			C					

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
P(oj)	0.91	1.00
v(i1), Volume for stream 2 or 5	679	
v(i2), Volume for stream 3 or 6	0	
s(i1), Saturation flow rate for stream 2 or 5	1700	
s(i2), Saturation flow rate for stream 3 or 6	1700	
P*(oj)	0.85	
d(M,LT), Delay for stream 1 or 4	8.3	
N, Number of major street through lanes	1	
d(rank,1) Delay for stream 2 or 5	1.3	

