

			engennaria e mei
Potential Capacity		1636	
Pedestrian Impedance Factor	1.00	1.00	
Movement Capacity		1636	
Probability of Queue free St.	1.00	1.00	
Maj L-Shared Prob Q free St.		1.00	
Step 3: TH from Minor St.	8	11	-
Conflicting Flows			-
Potential Capacity			
Pedestrian Impedance Factor	1.00	1.00	
Cap. Adj. factor due to Impeding mvmnt Movement Capacity	1.00	1.00	
Probability of Queue free St.	1.00	1.00	
Step 4: LT from Minor St.	7	10	-
Conflicting Flows		400	-
Potential Capacity	1 00	598	
Pedestrian Impedance Factor	1.00	1.00	
Maj. L, Min T Impedance factor Maj. L, Min T Adj. Imp Factor.	1.00		
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00	
Movement Capacity	1.00	596	
Worksheet 7-Computation of the Effect of	Two-stage Gap Ac	ceptance	-
	8	11	-
Step 3: TH from Minor St.	0	11	-
Part 1 - First Stage Conflicting Flows			
Potential Capacity			
Pedestrian Impedance Factor			
Cap. Adj. factor due to Impeding mvmnt			
Movement Capacity Probability of Queue free St.			
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	1 00	1 00	
Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mymnt	1.00	1.00	
Movement Capacity	1.00	1.00	
Result for 2 stage process:			-
a stage process:		`	
y C +	/	\	
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	<i>J</i>		\
Potential Capacity			
Pedestrian Impedance Factor	/		
Cap. Adj. factor due to Impeding mvmnt			
Movement Capacity		//	
Part 2 - Second Stage	<del></del>		<u> </u>
Conflicting Flows		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\
Potential Capacity			4
Pedestrian Impedance Factor			
Cap. Adj. factor due to Impeding mvmnt Movement Capacity			
Part 3 - Single Stage			
Conflicting Flows		400	\
Potential Capacity		598	<b>√</b>
Pedestrian Impedance Factor	1.00	1.00	



Cap. Adj. factor of Movement Capacity	edance factor. . Imp Factor. due to Impedi			1.00 1.00 1.00		1.00 596	)
Results for Two-sta y C t	tage process:					596	
Worksheet 8-Shared	d Lane Calcul	ations					
Movement		7 L	8 T	9 R	10 L	11 T	12 R
Volume (vph) Movement Capacity Shared Lane Capac	-				180 596		
Worksheet 9-Comput	tation of Eff	ect of Flar	ed Min	or Stree	et Appro	oaches	
Movement		7 L	8 T	9 R	10 L	11 T	12 R
C sep Volume Delay Q sep Q sep +1 round (Qsep +1)					596 180		
n max C sh SUM C sep n C act	y, Queue Leng	rth, and Lev	rel of S	Service			
Movement Lane Config	1 4 LT	7	8	9	10 L	11	12
v (vph) C(m) (vph) v/c 95% queue length Control Delay LOS Approach Delay Approach LOS	6 1636 0.00 0.01 7.2				180 596 0.30 1.29 13.6 B	13.6 B	
Worksheet 11-Share	ed Major LT I	impedance ar	nd Delay	,			
				Moveme	ent 2	Mover	ment 5

## 1.1.4.19 Interseção J – Pico Manhã

HCS+: Unsignalized Intersections Release 5.6

TWO-WAY STOP CONTROL SUMMARY

Analyst: Progeplan



Agency/Co.:

05/06/2023 Date Performed:

Analysis Time Period: Pico Manha

Intersection:

Jurisdiction: DER/DF

Units: U. S. Metric Analysis Year:

2023 Project ID: FUTURA COMERCIAL East/West Street: M2-M10 North/South Street: M9

Study period (hrs): 1.00 Intersection Orientation: EW

	Vehicle	Volumes	and	Adjustments_
Major Street:	Approach	Eastbo	ınd	

,0112	CIC VO.	Luilles ai	י כשוג שוי	ab cinc	.11 00				
Major Street: Approach	Εá	astboun	d		Westbound				
Movement	1	2	3	- 1	4	5	6		
	L	T	R	- 1	L	Т	R		
Volume					0	751			
Peak-Hour Factor, PHF					0.91	0.91			
Hourly Flow Rate, HFR					0	825			
Percent Heavy Vehicles					17				
Median Type/Storage RT Channelized?	Undi	vided			/				
Lanes					0	2			
Configuration				LT T					
Upstream Signal?		No			_	No			
opportant bighar.		110				110			
Minor Street: Approach	Northbound				Southbound				
Movement	7	8	9		10	11	12		
	L	T	R		L	T	R		
Volume	62								
Peak Hour Factor, PHF	1.00								
Hourly Flow Rate, HFR	62								
Percent Heavy Vehicles	0								
Percent Grade (%)		0				0			

Flared Approach: Exists?/Storage Lanes Configuration

Delay, Queue Length, and Level of Service

Approach	EB	WB	No	rthbound	d	S	outhbou:	nd
Movement	1	4	7	8	9	10	11	12
Lane Config		LT	L					
v (vph)		0	62			 		
C(m) (vph)		1530	600					
v/c		0.00	0.10					
95% queue length		0.00	0.35					
Control Delay		7.4	11.7					
LOS		A	В					
Approach Dolay				11 7				

Approach Delay Approach LOS В

HCS+: Unsignalized Intersections Release 5.6

Phone: E-Mail: Fax:

TWO-WAY STOP CONTROL (TWSC) ANALYSIS

Analyst: Progeplan

Agency/Co.: Date Performed: 05/06/2023 Analysis Time Period: Pico Manha Intersection:

DER/DF

Units: U. S. Metric Analysis Year:

Jurisdiction:

2023



Project ID: FUTURA COMERCIAL
East/West Street: M2-M10
North/South Street: M9
Intersection Orientation: EW

Study period (hrs): 1.00

	Vehicle '	Volumes	and Adj	ustment	S		
Major Street Movements	_ 1	2	3	4	5	6	
	L	Т	R	L	T	R	
Volume				0	751		
Peak-Hour Factor, PHF				0.91	0.91		
Peak-15 Minute Volume				0	206		
Hourly Flow Rate, HFR				0	825		
Percent Heavy Vehicles				17			
Median Type/Storage	Undi	vided		/			
RT Channelized?							
Lanes				0	2		
Configuration				LT	Т		
Upstream Signal?		No			No		
11 11 11 11 11							
Minor Street Movements	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume	62						
	1.00						
Peak Hour Factor, PHF							
Peak-15 Minute Volume	16						
Hourly Flow Rate, HFR	62						
Percent Heavy Vehicles	0	0			^		
Percent Grade (%)	0 /01	0		,	0		,
= =	s?/Storage	9		/			/
RT Channelized							
Lanes	1_						
Configuration	L						
Pe	edestrian	Volumes	and Ad	justmen	ts		
Movements	13	14	15	16			
Flow (ped/hr)	0	0	0	0			
Lane Width (m)	3.6	3.6	3.6	3.6			
Walking Speed (m/sec)	1.2	1.2	1.2	1.2			
Percent Blockage	0	0	0	0			
	Ups	tream Si	gnal Da	ta			
Proq.		Arrival	Green		Prog		Distance
Flow	Flow	Type	Time	Lengt	_		to Signal
vph	vph	11-	sec	sec	kph		meters
CO Toft Muses							
S2 Left-Turn							
Through							
S5 Left-Turn							
Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared in volume, major th vehicles:	\ /	0
Shared ln volume, major rt vehicles:	/ /	0
Sat flow rate, major th vehicles:		1700
Sat flow rate, major rt vehicles:		1700
Number of major street through lanes:	\	2

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Ca	alculati	on						77
Movement	1	-4	7	8	9	10	11	12
	L	L	L	Т	R	L	T	R
t(c,base)		4.1	7.1					
t(c,hv) P(hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
t(c,g)		1 /	0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,1t)		0.00	0.70					



										engennaria e mi
t(c,T):	1-stage 2-stage 1-stage	0.00	0.00 0.00 4.3	0.00 1.00 6.4	0.00	0.00	0.00	0.00 1.00	0.00	
	2-stage									
Follow-Up Movement		alculat 1	ions 4	7	8	9	10	11	12	
		L	L	L	T	R	L	Т	R	
t(f,base) t(f,HV)	)	0.90	2.20	3.50	0.90	0.90	0.90	0.90	0.90	_
P(HV) t(f)			17 2.4	0 3.5						
Worksheet	t 5-Effe	ct of t	Jpstrea	m Signa	ıls					_
Computati	ion 1-Qu	eue Cle	arance	Time a	t Upstr	eam Sig Moveme		Mor	vement 5	
					∨ (	t) V(	l,prot)	V(t)	V(l,prot)	
V prog Total Sat Arrival T Effective Cycle Ler Rp (from Proportic g(q1) g(q2) g(q)	Type e Green, ngth, C Exhibit	g (sec (sec) 16-11)	:)		n P					
Computati	ion 2-Pr	oportio	n of T	WSC Int	ersecti	on Time	block			_
					V (	Moveme t) V(	nt 2 l,prot)		vement 5 V(l,prot)	
Smoothing Proportic Max plate Min plate Duration Proportic	on of co coned fl coned fl of bloc con time	nflicti ow, V(c ow, V(c ked per blocked	c,max) c,min) ciod, t l, p	(p)		0.00	0	(	0.000	_
Computati	ion 3-Pl	atoon E	Event Pe	eriods	Res					
p(2) p(5) p(dom) p(subo) Constrair	ned or u	nconstr	ained?		0.0					
Proportion unblocked for minor movements	d r		(1 Single	-stage		(2) Two-St ge I	age Proc	(3) cess tage II	$\rightarrow$	_
p(1) p(4) p(7) p(8) p(9) p(10) p(11) p(12)									7	
Computati Single-St Movement	tage Pro		1	4	7	8	9	10	11 12	
			L	Ĺ	L	T	R	L	T R	
V c,x				0	412					
Px										1



C r,x C plat,x

Two-Stage Process	7		0	1	0	1	1
Stage1	7 Stage2	Stage1	8 Stage2		.0 Stage2		1 Stage2
V(c,x)							
S	3000						
P(x)							
V(c,u,x)							
C(r,x)							
C(plat,x)							
Worksheet 6-Impedance	e and Cap	acity Ec	quations				
Step 1: RT from Minor	~ S+			9		12	
Conflicting Flows Potential Capacity							
Pedestrian Impedance	Factor			1.00		1.00	
Movement Capacity							
Probability of Queue	free St.			1.00		1.00	
Step 2: LT from Major	St.			4		1	
Conflicting Flows				0			
Potential Capacity				1530			
Pedestrian Impedance	Factor			1.00		1.00	
Novement Capacity Probability of Queue	free St			1530 1.00		1.00	
Maj L-Shared Prob Q f				1.00		1.00	
Step 3: TH from Minor	St.			8		11	
Conflicting Flows							
otential Capacity							
Pedestrian Impedance				1.00		1.00	
Cap. Adj. factor due Movement Capacity	to Imped	ing mvmr	nt	1.00		1.00	
Probability of Queue	free St.			1.00		1.00	
Step 4: LT from Minor	St.			7		10	
Conflicting Flore				412			
Conflicting Flows Potential Capacity				600			
Pedestrian Impedance	Factor			1.00		1.00	
Maj. L, Min T Impedan						1.00	
Maj. L, Min T Adj. Im				1 00		1.00	
Cap. Adj. factor due Movement Capacity	to Imped	ing mvmr	ıt	1.00 600		1.00	
Worksheet 7-Computati	ion of th	e Effect	of Two-	-stage Ga	p Accept	cance	
Step 3: TH from Minor	St.			8		11	
Part 1 - First Stage						$\setminus$ $/$	
Conflicting Flows				1/		1 (	/
Potential Capacity				ا لا		16	
edestrian Impedance				\			
Cap. Adj. factor due Movement Capacity	to Imped	ing mvmr	nt _				_
Probability of Queue	free St.			7/		/ > -	
art 2 - Second Stage							$\rightarrow$ $\vdash$
Conflicting Flows	-					) [	/
Potential Capacity	_				$\longrightarrow$		
Pedestrian Impedance						\	\
Cap. Adj. factor due Movement Capacity	to Imped	ing mvmr	nt			\	
Part 3 - Single Stage							
Conflicting Flows							
Potential Capacity	Factor			1 00		1 00	
Pedestrian Impedance	ractor			1.00		1.00	



Result for 2 stage process:	
a	
У	
Ct	
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 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 412	
Potential Capacity 600	
Pedestrian Impedance Factor 1.00 1.00	
Maj. L, Min T Impedance factor 1.00	
Maj. L, Min T Adj. Imp Factor. 1.00	
Cap. Adj. factor due to Impeding mvmnt 1.00 1.00	
Movement Capacity 600	
Results for Two-stage process:	
a	
У С t 600	
Worksheet 8-Shared Lane Calculations	
Movement 7 8 9 10 11 12	
Movement 7 8 9 10 11 12 L T R L T R	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  Worksheet 9-Computation of Effect of Flared Minor Street Approaches	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  Worksheet 9-Computation of Effect of Flared Minor Street Approaches  Movement 7 8 9 10 11 12	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  Worksheet 9-Computation of Effect of Flared Minor Street Approaches	
Novement	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 600	
Novement	
Movement	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 Volume 62 Delay Q sep 1 round (Qsep +1)  n max C sh SUM C sep n	
Movement	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 Volume 62 Delay Q sep 1 round (Qsep +1)  n max C sh SUM C sep n	
Novement   7	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 Volume 62 Delay Q sep 1 round (Qsep +1)  n max C sh SUM C sep n	
Movement 7 8 9 10 11 12  L T R L T R  Volume (vph) 62  Movement Capacity (vph) 600  Shared Lane Capacity (vph)  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 600  Volume 62  Volume 62  Q sep 10  Volume 62  Q sep 11  round (Qsep +1)  n max C sh SUM C sep n C act  Worksheet 10-Delay, Queue Length, and Level of Service	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 600 Volume 62 Volume 62 Delay Q sep 1 round (Qsep +1)  n max C sh SUM C sep n C act  Movement 1 4 7 8 9 10 11 12	
Movement 7 8 9 10 11 12 L T R L T R  Volume (vph) 62 Movement Capacity (vph) 600 Shared Lane Capacity (vph)  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 600 Volume 62 Volume 62 Delay Q sep 1 round (Qsep +1)  n max C sh SUM C sep n C act  Movement 1 4 7 8 9 10 11 12	
Movement 7 8 9 10 11 12  L T R L T R  Volume (vph) 62  Movement Capacity (vph) 600  Shared Lane Capacity (vph)  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  Volume 62  Delay Q sep Q Q sep +1  round (Qsep +1)  n max C sh SUM C sep n C act  Movement 1 4 7 8 9 10 11 12  Lane Config LT L  v (vph) 0 62	
Movement 7 8 9 10 11 12  L T R L T R  Volume (vph) 62  Movement Capacity (vph) 600  Shared Lane Capacity (vph)  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 600  Volume 62  Delay Q sep 4  Volume 62  Delay Q sep +1 round (Qsep +1)  n max C sh  SUM C sep n C act  Worksheet 10-Delay, Queue Length, and Level of Service  Movement 1 4 7 8 9 10 11 12  L T R  Movement 1 4 7 8 9 10 11 12  V (vph) 0 62  C(m) (vph) 0 62  C(m) (vph) 1530 600	
Movement 7 8 9 10 11 12  L T R L T R  Volume (vph) 62  Movement Capacity (vph) 600  Shared Lane Capacity (vph)  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  Volume 62  Delay Q sep Q sep +1  round (Qsep +1)  n max C sh SUM C sep n C act  Movement 1 4 7 8 9 10 11 12  Lane Config LT L  v (vph) 0 62	



11.7 Control Delay 7.4 LOS Α В

Approach Delay 11.7 Approach LOS В

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5		0
v(i2), Volume for stream 3 or 6		0
s(il), Saturation flow rate for stream 2 or 5		1700
s(i2), Saturation flow rate for stream 3 or 6		1700
P*(oj)		1.00
d(M,LT), Delay for stream 1 or 4		7.4
N, Number of major street through lanes d(rank,1) Delay for stream 2 or 5		2

## Interseção J – Pico Tarde

HCS+: Unsignalized Intersections Release 5.6

\_\_TWO-WAY STOP CONTROL SUMMARY\_

Analyst: Progeplan Agency/Co.:
Date Performed: 05/06/2023 Analysis Time Period: Pico Tarde Intersection: J Jurisdiction: DER/DF

Units: U. S. Metric

Analysis Year:

v (vph)

C(m) (vph)

Project ID: FUTURA COMERCIAL East/West Street: M2-M10 North/South Street:

Intersection C	rientation:	EW		S	tudy pe	riod (hrs	): 1.00
	Veh	icle Vo	lumes an	d Adiu	stments		
Major Street:			astbound			Westboun	d
-	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume					10	2138	
Peak-Hour Fact	or, PHF				0.	91 0.91	
Hourly Flow Ra	te, HFR				10	2349	
Percent Heavy	Vehicles				6		
Median Type/St	orage	Undi	vided		/		
RT Channelized	1?						
Lanes						0 2	
Configuration						LTT	
Upstream Signa	1?		No			No	
Minor Street:			orthboun			Southbou	
	Movement	7	8	9	10		12
		L	T	R	L	Т	R/
Volume		6					<del></del>
Peak Hour Fact	or, PHF	0.91					
Hourly Flow Ra	te, HFR	6			\		
Percent Heavy	Vehicles	0					
Percent Grade	(%)		0		1 /	0	<b>\( \)</b>
Flared Approac	h: Exists?	/Storage	Э		1		1 ~/ [
Lanes		1					1 /> -
Configuration			Ĺ				١١
				1 -	1 5 ~		1
7			ength, a				h. la la
Approach Movement	EB	WB 4 I		thboun	.a 9	I 10	thbound 11 12
	1	- '	7	8	9	1 10	11 12
Lane Config		LT	L				

10

1597

0.01

207



0.09 95% queue length 0.02 7.3 Control Delay LOS Α С

22.9 Approach Delay Approach LOS С

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax: E-Mail:

TWO-WAY STOP CONTROL (TWSC) ANALYSIS

Analyst: Progeplan Agency/Co.: Date Performed: 05/06/2023 Analysis Time Period: Pico Tarde Intersection: Jurisdiction: DER/DF Units: U. S. Metric

Analysis Year: 2023
Project ID: FUTURA COMERCIAL
East/West Street: M2-M10 North/South Street: M9
Intersection Orientation: EW

Study period (hrs): 1.00

	Vehicle	Volumes	and A	djustmen	ts		
Major Street Movements	_ 1	2	3	4	5	6	
	L	T	R	L	Т	R	
Volume				10	2138		
Peak-Hour Factor, PHF				0.91	0.91		
Peak-15 Minute Volume				3	587		
Hourly Flow Rate, HFR				10	2349		
Percent Heavy Vehicles				6			
Median Type/Storage RT Channelized?	Und	ivided		/			
Lanes				0	2		
Configuration				L	ТТ		
Upstream Signal?		No			No		
Minor Street Movements	7	8	9	10	11	12	
	L	T	R	L	T	R	

V	olume		6	
Ρ	eak Hour Factor,	PHF	0.91	
Ρ	eak-15 Minute Vol	Lume	2	
Н	ourly Flow Rate,	HFR	6	
P	ercent Heavy Vehi	icles	0	
Ρ	ercent Grade (%)			0
F	lared Approach:	Exists?/S	Storage	
R	T Channelized			
_			_	

Lanes Configuration

Movements	_Pedestrian 13	Volumes 14	and Adj 15	ustments16	
Flow (ped/hr) Lane Width (m) Walking Speed (m/sec) Percent Blockage	0 3.6 1.2	0 3.6 1.2 0	0 3.6 1.2 0	0 3.6 1.2 0	

	Up	stream Si	gnal Dat	a		7 /
Prog.	Sat	Arrival	Green	Cycle	Prog.	Distance
Flow	Flow	Type	Time	Length	Speed	to Signal
vph	vph		sec	sec	kph	meters



S2 Left-Turn Through S5 Left-Turn Through

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

				I	Movement	2	Movemen	nt 5
Shared ln volu	ıme, majo	r th vel	hicles:				0	
Shared ln volu	ıme, majo	r rt vel	hicles:				0	
Sat flow rate,	major t	h vehic	les:				1700	
Sat flow rate,	major r	t vehic	les:				1700	
Number of majo	or street	through	h lanes	:			2	
Worksheet 4-Ci	ritical G	ap and	Follow-	up Time	Calcula	ation		
Critical Gap (	Calculati	on						
Movement	1	4	7	8	9	10	11	12
	L	L	L	Т	R	L	Т	R
t(c,base)		4.1	7.1					
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)		6	0					
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,1t)		0.00	0.70					
t(c,T): 1-sta	ge 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-sta	ge 0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-sta	ige	4.2	6.4					
2-sta	ıge							
Follow-Up Time								
Movement	1	4	7	8	9	10	11	12
	L	L	L	Т	R	L	Т	R
t(f,base)		2.20	3.50					
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
- ()		6	0					
P(HV)		2.3	3.5					

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal Movement 2 Movement 5 V(t) V(l,prot) V(t)V(l,prot)

V prog

Total Saturation Flow Rate, s (vph)

Arrival Type

Effective Green, g (sec) Cycle Length, C (sec) Rp (from Exhibit 16-11)

Proportion vehicles arriving on green P

g(q1) g(q2)

g (q)

Computation 2-Proportion of TWSC Intersection Time blocked

Movement 5 Movement 2

V(t) V(l,prot) V(t) V(l,prot)

alpha beta

Travel time, t(a) (sec)

Smoothing Factor, F

Proportion of conflicting flow, f

Max platooned flow, V(c,max) Min platooned flow, V(c,min)

Duration of blocked period, t(p)

Proportion time blocked, p

0.000

0.000

Computation 3-Platoon Event Periods Result

0.000 p(2)



p(5) 0.000 p(dom) p(subo) Constrained or unconstrained? Proportion unblocked (1) (2) (3) for minor Single-stage Two-Stage Process movements, p(x)Process Stage I Stage II p(1) p(4) p(7) p(8) p(9) p(10) p(11) p(12) Computation 4 and 5 Single-Stage Process 10 12 11 L L L Т R V c,x 1194 S Рx V c,u,x Cr,x C plat,x Two-Stage Process 10 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 V(c,x) 3000 P(x) V(c,u,x)C(r,x) C(plat,x)Worksheet 6-Impedance and Capacity Equations Step 1: RT from Minor St. 9 12 Conflicting Flows Potential Capacity Pedestrian Impedance Factor 1.00 1.00 Movement Capacity Probability of Queue free St. 1.00 1.00 Step 2: LT from Major St. 4 1 Conflicting Flows Potential Capacity 1597 Pedestrian Impedance Factor 1.00 1.00 Movement Capacity 1597 Probability of Queue free St. 0.99 1.00 Maj L-Shared Prob Q free St. 0.99 11 Step 3: TH from Minor St. 8 Conflicting Flows Potential Capacity 1.00 1.00 Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt 0.99 0.99 Movement Capacity Probability of Queue free St. 1.00 1.00 Step 4: LT from Minor St. 10 Conflicting Flows 1194 208 Potential Capacity 1.00 Pedestrian Impedance Factor 1.00



Maj. L, Min T Impedance factor Maj. L, Min T Adj. Imp Factor. Cap. Adj. factor due to Impeding mvmnt Movement Capacity	0.99	0.99 1.00 1.00	_
Worksheet 7-Computation of the Effect of Tw	vo-stage Gap F	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 Probability of Queue free St.			_
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 Cap. Adj. factor due to Impeding mymnt Movement Capacity	1.00	1.00	-
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 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 Maj. L, Min T Impedance factor Maj. L, Min T Adj. Imp Factor. Cap. Adj. factor due to Impeding mvmnt Movement Capacity	1194 208 1.00 0.99 207	1.00 0.99 1.00 1.00	
Results for Two-stage process:			
a Y C t	207	TAF	
Worksheet 8-Shared Lane Calculations		$\rightarrow$	++-
Movement 7 L	8 9 T R	10 11 12 L T R	
Volume (vph) 6 Movement Capacity (vph) 207 Shared Lane Capacity (vph)			



Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement			7	8	9	10	11	12
			L	Т	R	L	Т	R
C sep			20	7				
Volume			6					
Delay								
Q sep								
Q sep +1								
round (Qsep +1)								
n max							<del></del> -	
C sh								
SUM C sep								
n								
C act 								
C act  Worksheet 10-Delay  Movement Lane Config	, Queue	e Length,	, and Le	evel of	Servic	e 10	11	12
Worksheet 10-Delay		4	7				11	12
Worksheet 10-Delay Movement Lane Config		4 LT	7 L				11	12
Worksheet 10-Delay Movement Lane Config v (vph)		4 LT	7 L				11	12
Movement Lane Config  v (vph) C(m) (vph)		4 LT 10 1597	7 L 6 207				11	12
Movement Lane Config  v (vph) C(m) (vph) v/c		4 LT 10 1597 0.01	7 L 6 207 0.03				11	12
Movement Lane Config  v (vph) C(m) (vph) v/c 95% queue length		10 1597 0.01 0.02	7 L 6 207 0.03 0.09				11	12
Worksheet 10-Delay Movement Lane Config v (vph) C(m) (vph) v/c 95% queue length Control Delay		4 LT 10 1597 0.01 0.02 7.3	7 L 6 207 0.03 0.09 22.9				11	12

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.99
v(il), Volume for stream 2 or 5		0
v(i2), Volume for stream 3 or 6		0
s(il), Saturation flow rate for stream 2 or 5		1700
s(i2), Saturation flow rate for stream 3 or 6		1700
P*(oj)		0.99
d(M,LT), Delay for stream 1 or 4		7.3
N, Number of major street through lanes d(rank,1) Delay for stream 2 or 5		2

## 1.1.4.20 Interseção J – Pico Tarde

HCS+: Unsignalized Intersections Release 5.6 TWO-WAY STOP CONTROL SUMMARY Analyst: Progeplan Agency/Co.: 05/06/2023 Date Performed: Analysis Time Period: Pico Tarde Intersection: Jurisdiction: DER/DF Units: U. S. Metric Analysis Year: 2023 Project ID: FUTURA COMERCIAL East/West Street: M2-M10 North/South Street: М9 Intersection Orientation: EW Study period (hrs): Vehicle Volumes and Adjustments Major Street: Approach Eastbound Westbound Movement 4 R | L Т R Volume 10 2138 Peak-Hour Factor, PHF 0.91 0.91 Hourly Flow Rate, HFR 10



Percent Heavy Vehicles 6 Median Type/Storage Undivided RT Channelized? 2 Lanes Ω LT T Configuration Upstream Signal? No No Minor Street: Approach Northbound Southbound 9 10 Movement 8 11 12 L Т R  $\mathbb{L}$ Т R Volume Peak Hour Factor, PHF 0.91 Hourly Flow Rate, HFR 6 Percent Heavy Vehicles 0 Percent Grade (%) 0 Flared Approach: Exists?/Storage Lanes Configuration Delay, Queue Length, and Level of Service Southbound Approach EB WB Northbound Movement 4 8 9 10 LT L Lane Config v (vph) 10 C(m) (vph) 1597 207 0.01 0.03 v/c 95% queue length 0.09 0.02 22.9 Control Delay 7.3 LOS C Α 22.9 Approach Delay Approach LOS С

HCS+: Unsignalized Intersections Release 5.6

Phone: E-Mail: Fax:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS\_ Analyst: Progeplan Agency/Co.: Date Performed: 05/06/2023 Analysis Time Period: Pico Tarde Intersection: Jurisdiction: DER/DF Units: U. S. Metric Analysis Year: Project ID: FUTURA COMERCIAL East/West Street: M2-M10 North/South Street: М9 Intersection Orientation: EW Study period (hrs): 1.00 Vehicle Volumes and Adjustments Major Street Movements 1 2 3 6 Т R L L Т R Volume 10 2138 Peak-Hour Factor, PHF 0.91 0.91 Peak-15 Minute Volume 587 3 Hourly Flow Rate, HFR 10 2349 Percent Heavy Vehicles Median Type/Storage 6 Undivided RT Channelized? 0 2 Lanes Configuration LT т Upstream Signal? No No



Peak Hour Factor, PHF										
Volume	Minor Street Movemen	nts								
Peak Hour Factor, PHF			L	T	R	L	Ι	' R		
Peak-15 Minute Volume 2 Hourly Flow Rate, HFR 6 Percent Heavy Vehicles 0 Percent Grade (%) 0 0 0 Flared Approach: Exists?/Storage / / / / / RT Channelized Lanes 1 Configuration L  Pedestrian Volumes and Adjustments 13 14 15 16  Flow (ped/hr) 0 0 0 0 0 Lane Width (n) 3.6 3.6 3.6 3.6 3.6 Walking Speed (m/sec) 1.2 1.2 1.2 1.2 Percent Blockage 0 0 0 0 0  Upstream Signal Data Prog. Sat Arrival Green Cycle Prog. Distance Plow Type Time Length Speed to Signal Wyh vph Type Time Length Speed to Signal Meters  S2 Laft-Turn Through Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles Shared In volume, major th vehicles: 0 0 Sat flow rate, major th vehicles: 1700 Sat flow rate, major rate through lanes: 1700 Sat flow rate, major rate vehicles: 1700 Sat flow rat	Volume		6							
Hourly Flow Rate, HFR 6 Percent Heavy Vehicles 0 Percent Grade (%) 0 0 0 Percent Grade (%) 0 0 0 0 Percent Grade (%) 0 0 0 0 0 0	Peak Hour Factor, Pl	HF	0.91							
Percent Heavy Vehicles 0 Plared Approach: Exists/Storage / / RT Channelized Lanes 1 Configuration L  Pedestrian Volumes and Adjustments Movements 13 14 15 16 Flow (ped/hr) 0 0 0 0 0 Lane Width (m) 3.6 3.6 3.6 3.6 3.6 Walking Speed (m/sec) 1.2 1.2 1.2 1.2 1.2 Percent Blockage 0 0 0 0 0  Upstream Signal Data Prog. Sat Arrival Green Cycle Prog. Distance Flow Flow Type Time Length Speed to Signal vph vph vph vph sec sec kph meters  \$2 Left-Turn Through  Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles  \$35 Left-Turn Through  Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles  \$4 Line Movement 2 Movement 5  Shared In volume, major th vehicles: 0 Sat flow rate, major th vehicles: 1700 Sat flow rate, major tr twhicles: 1700 Solution Movement 1 4 7 8 9 10 11 12  L L L T R L T R  t(c,base) 4.1 7.1 t(c,base) 4.1 7.1 t(c,base) 4.1 7.1 t(c,base) 6 0 0.20 0.20 0.10 0.20 0.20 0.10 Percent Grade 0.00 0.00 0.00 0.00 0.00 0.00 0.00  **Total Gap Calculation Movement 1 4 7 8 9 10 11 12 **Total Gap Calculation Movement 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										
Percent Grade (%)	-									
Pedestrian Volumes and Adjustments		les	0	0			0			
Pedestrian Volumes and Adjustments		vi a+ a2 / c	+02200	U		,	U		,	
Pedestrian Volumes and Adjustments		XISUS:/S	corage			/			/	
Pedestrian Volumes and Adjustments			1							
The property of the property	Configuration									
The property of the property		Padas	trian 1	Volumes	and	Adiust	mants			
Lane Width (m)	Movements									
Upstream Signal Data	Flow (ped/hr)		0	0	0		)			
Description	Lane Width (m)									
Upstream Signal Data		c)								
Prog. Sat Arrival Green   Cycle Prog. Distance Flow roph   Flow Type   Time   Length   Speed   to Signal with respect to the program of the	Percent Blockage		0	0	0	(	)			
Prog. Sat Arrival Green   Cycle Prog. Distance Flow roph   Flow Type   Time   Length   Speed   to Signal with respect to the program of the			Upst	ream Si	gnal	Data				
vph         vph         sec         kph         meters           S2 Left-Turn Through           Movement 2         Movement 5           Movement 2         Movement 5           Shared In volume, major th vehicles:         0           Shared In volume, major th vehicles:         0                Sat flow rate, major th vehicles:             1700                Sat flow rate, major th vehicles:             1700                Sat flow rate, major th vehicles:             1700                     Sat flow rate, major th vehicles:              1700                     Sat flow rate, major th vehicles:             1700                     Sat flow rate, major th vehicles:             1700                           Sat flow rate, major th vehicles:                   1700	Pro	og. S			-	_	ycle	Prog.	Distanc	e
S2	Flo	ow F	low '	Type	Tin	ne Le	ength	Speed	_	
Through  S5 Left-Turn Through  Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles    Movement 2   Movement 5	vpl	h v	ph		sec	: 5	sec	kph	meters	
## Through    Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles										
Movement 2   Movement 5										
Movement 2   Movement 5	Workshoot 2-Data for	r Comput	ing Ef	foot of	Do 1 -		Major C	'+ xoo+ 17	ohialoa	
Shared In volume, major th vehicles:  Shared In volume, major rt vehicles:  Sat flow rate, major rt vehicles:  Sat flow rate, major rt vehicles:  Sat flow rate, major rt vehicles:  Number of major street through lanes:  Worksheet 4-Critical Gap and Follow-up Time Calculation  Critical Gap Calculation  Movement  1				Tect or						
Shared In volume, major rt vehicles:  Sat flow rate, major th vehicles:  Sat flow rate, major rt vehicles:  Number of major street through lanes:  Worksheet 4-Critical Gap and Follow-up Time Calculation  Critical Gap Calculation  Movement  1					MC	vemen	Ε Ζ	Moveme	nt 5	
Sat flow rate, major th vehicles: 1700 Sat flow rate, major rt vehicles: 1700 Number of major street through lanes: 2  Worksheet 4-Critical Gap and Follow-up Time Calculation  Critical Gap Calculation Movement 1 4 7 8 9 10 11 12 L L T R L T R  t(c,base) 4.1 7.1 t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Shared In volume, ma	ajor th	vehicle	es:				0		
Sat flow rate, major rt vehicles: 1700 Number of major street through lanes: 2  Worksheet 4-Critical Gap and Follow-up Time Calculation  Critical Gap Calculation Movement 1 4 7 8 9 10 11 12 L L L T R L T R  t(c,base) 4.1 7.1 t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Shared in volume, ma	ajor rt '	vehicle	es:				0		
Number of major street through lanes:       2         Worksheet 4-Critical Gap and Follow-up Time Calculation         Critical Gap Calculation         Movement       1       4       7       8       9       10       11       12         L       L       L       T       R       L       T       R         t(c,base)       4.1       7.1       1.00										
Worksheet 4-Critical Gap and Follow-up Time Calculation  Critical Gap Calculation  Movement 1 4 7 8 9 10 11 12  L L L T R L T R  t(c,base) 4.1 7.1  t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	_									
Critical Gap Calculation  Movement 1 4 7 8 9 10 11 12  L L L T R L T R   t(c,base) 4.1 7.1  t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Number of major stre	eet thro	ugh la	nes:				2		
Movement 1 4 7 8 9 10 11 12  L L L T R   t(c,base) 4.1 7.1  t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Worksheet 4-Critical	l Gap and	d Foll	ow-up T	ime (	Calcula	ation			
Movement 1 4 7 8 9 10 11 12  L L L T R   t(c,base) 4.1 7.1  t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Critical Can Calant	ation								
L L L T R L T R  t(c,base)	_		7	Ω		9	1 ()	11	12	
t(c,base)										
t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ш		-	_			-	_		
t(c,hv) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	t(c,base)	4.1	7.	1						
t(c,g)					00	1.00	1.00	1.00	1.00	
Percent Grade	P(hv)	6						\		
t(3,1t)	t(c,g)		0.3	20 0.	20					
t(c,T): 1-stage 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	Percent Grade									
2-stage 0.00 0.00 1.00 1.00 0.00 1.00 0.00 1.00 0.00 t(c) 1-stage 4.2 6.4 2-stage  Follow-Up Time Calculations Movement 1 4 7 8 9 10 11 12 L L T R L T R  t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9					00 /	0.00	0.00	0.00	0.00	
t(c) 1-stage 2-stage 4.2 6.4  Follow-Up Time Calculations Movement 1 4 7 8 9 10 11 12 L L T R L T R  t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 P(HV) 6 0	t(3,1t)		0 0.	70	(			_ ~		
2-stage  Follow-Up Time Calculations Movement 1 4 7 8 9 10 11 12 L L T R L T R  t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 P(HV) 6 0	t(3,1t) t(c,T): 1-stage 0.0	0.0	0 0.	70 00 0.	00	0.00	0.00	0.00	0.00	
Movement 1 4 7 8 9 10 11 12 L T R L T R  t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	t(3,lt) t(c,T): 1-stage 0.0 2-stage 0.0	0.00	0 0. 0 0. 0 1.	70 00 0. 00 1.	00	0.00	0.00	0.00	0.00	
Movement 1 4 7 8 9 10 11 12 L T R L T R  t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	<pre>t(3,lt) t(c,T): 1-stage 0.0 2-stage 0.0 t(c) 1-stage</pre>	0.00	0 0. 0 0. 0 1.	70 00 0. 00 1.	00	0.00	0.00	0.00	0.00	
t(f,base) 2.20 3.50 t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 P(HV) 6 0	t(3,1t) t(c,T): 1-stage 0.0 2-stage 0.1 t(c) 1-stage 2-stage	0.00 0.00 0.00 4.2	0 0.0 0 0.0 0 1.0 6.0	70 00 0. 00 1.	00	0.00	0.00	0.00	0.00	
t(f,HV) 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.9	<pre>t(3,lt) t(c,T): 1-stage 0.0</pre>	00 0.00 00 0.00 4.2	0 0.1 0 0.1 0 1.0 6.4	70 00 0. 00 1. 4	00 00	0.00	0.00	0.00	0.00	
P(HV) 6 0	t(3,1t) t(c,T): 1-stage 0.0 2-stage 0.0 t(c) 1-stage 2-stage  Follow-Up Time Calcometer  Movement 1	00 0.00 00 0.00 4.2	0 0.0 0 0.0 0 1.0 6.7	70 00 0. 00 1. 4	00	0.00	0.00	0.00	0.00	
	<pre>t(3,lt) t(c,T): 1-stage 0.0</pre>	00 0.00 00 0.00 4.2 ulations 4 L	0 0.0 0 0.0 0 1.0 6.4	70 00 0. 00 1. 4	00	0.00	0.00	0.00 1.00	0.00 0.00	
t(f) 2.3 3.5	t(3,1t) t(c,T): 1-stage 0.0 2-stage 0.0 t(c) 1-stage 2-stage  Follow-Up Time Calco Movement 1 t(f,base) t(f,HV) 0.9	00 0.00 00 0.00 4.2 ulations 4 L	0 0.0 0 0.0 0 1.0 6.4	70 00 0. 00 1. 4	00000	0.00 0.00	0.00 1.00	0.00 1.00	0.00 0.00	
	t(3,1t) t(c,T): 1-stage 0.0 2-stage 0.0 t(c) 1-stage 2-stage Follow-Up Time Calco Movement 1 L  t(f,base) t(f,HV) 0.0	00 0.00 00 0.00 4.2 ulations 4 L 2.20 90 0.9	7 L	70 00 0. 00 1. 4 8 T	00000	0.00 0.00	0.00 1.00	0.00 1.00	0.00 0.00	

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

Movement 2

V(t) V(1,prot) V(t)

Movement 5 t) V(1,prot)



```
V prog
Total Saturation Flow Rate, s (vph)
Arrival Type
Effective Green, g (sec)
Cycle Length, C (sec)
Rp (from Exhibit 16-11)
Proportion vehicles arriving on green {\tt P}
g(q1)
g(q2)
g (q)
Computation 2-Proportion of TWSC Intersection Time blocked
                                               Movement 2
                                                                   Movement 5
                                            V(t) V(l,prot) V(t) V(l,prot)
alpha
beta
Travel time, t(a) (sec)
Smoothing Factor, F
Proportion of conflicting flow, f
Max platooned flow, V(c,max)
Min platooned flow, V(c,min)
Duration of blocked period, t(p)
Proportion time blocked, p
                                                  0.000
                                                                     0.000
Computation 3-Platoon Event Periods
                                           Result
                                           0.000
p(2)
p(5)
                                           0.000
p(dom)
p(subo)
Constrained or unconstrained?
Proportion
unblocked
                             (1)
                                               (2)
                                                                (3)
for minor
                        Single-stage
                                               Two-Stage Process
movements, p(x)
                          Process
                                           Stage I
                                                            Stage II
p(1)
p(4)
p(7)
p(8)
p(9)
p(10)
p(11)
p(12)
Computation 4 and 5
Single-Stage Process
Movement
                          1
                                  4
                                                               10
                                                                       11
                                                                              12
                                                                       Т
                                                                               R
V c,x
                                0
                                        1194
Рx
V c,u,x
Cr,x
C plat,x
Two-Stage Process
               Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2
V(c,x)
                        3000
P(x)
V(c,u,x)
\overline{C(r,x)}
C(plat,x)
Worksheet 6-Impedance and Capacity Equations
Step 1: RT from Minor St.
                                                       9
                                                                         12
```



			enger
Conflicting Flows			
Potential Capacity Pedestrian Impedance Factor	1.00	1.00	
Movement Capacity	1.00	1.00	
Probability of Queue free St.	1.00	1.00	
Step 2: LT from Major St.	4	1	
Conflicting Flows	0		
Potential Capacity	1597		
Pedestrian Impedance Factor	1.00	1.00	
Movement Capacity Probability of Queue free St.	1597 0.99	1.00	
Maj L-Shared Prob Q free St.	0.99	1.00	
Step 3: TH from Minor St.	8	11	
Conflicting Flows			
Potential Capacity			
Pedestrian Impedance Factor	1.00	1.00	
Cap. Adj. factor due to Impeding mymnt	0.99	0.99	
Movement Capacity Probability of Queue free St.	1.00	1.00	
	1.00		
Step 4: LT from Minor St.	7	10	
Conflicting Flows	1194		
Potential Capacity	208	1.00	
Pedestrian Impedance Factor	1.00	1.00 0.99	
Maj. L, Min T Impedance factor Maj. L, Min T Adj. Imp Factor.		1.00	
Cap. Adj. factor due to Impeding mymnt	0.99	1.00	
Movement Capacity	207		
Step 3: TH from Minor St.  Part 1 - First Stage	8	11	
Conflicting Flows Potential Capacity			
Pedestrian Impedance Factor			
Cap. Adj. factor due to Impeding mvmnt			
Movement Capacity Probability of Queue free St.			
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 mymnt Movement Capacity	0.99	0.99	
Result for 2 stage process:		<del></del>	
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		<del></del>	++
Conflicting Flows	(		/ /
Potential Capacity	\		
Pedestrian Impedance Factor Cap. Adj. factor due to Impeding mvmnt			/ /
Movement Capacity			
- 4		I	- 1

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		1	194			
Potential Capacity		2	08			
Pedestrian Impedance Factor			.00		1.00	
Maj. L, Min T Impedance factor					0.99	
Maj. L, Min T Adj. Imp Factor.					1.00	
Cap. Adj. factor due to Impeding mvm	nn+	0	.99		1.00	
Movement Capacity	III C		07		1.00	
riovement capacity		_	0 /			
Results for Two-stage process:						
a						
У						
C t		2	07			
		_	0 /			
Worksheet 8-Shared Lane Calculations	3					
Movement	7	8	9	10	11	12
110 V O.M.O.T.O	L	Т	R	L	Т	R
	_	-		_	-	
Volume (vph)	6					
Movement Capacity (vph)	207					
Shared Lane Capacity (vph)						
Sharea Pane Sapasis, (vpn)						
	1	1 14'	~		1	
Worksheet 9-Computation of Effect of	Flare	a Minor	Street	t Approa	acnes	
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
C sep	207					
Volume	6					
Delay						
Q sep						
Q sep +1						
round (Qsep +1)						
Tound (Qsep 11)						
n max						
C sh						
SUM C sep						
n						
C act						

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

Movement	1	4	7	8	9	10	11	12
Lane Config		LT	L					
v (vph)		10	6			$\overline{}$		
C(m) (vph)		1597	207		/	\		
v/c		0.01	0.03					
95% queue length		0.02	0.09					
Control Delay		7.3	22.9					
LOS		A	С				\ /	
Approach Delay				22.9	/		- 1 1	/
Approach LOS				С				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.99
v(il), Volume for stream 2 or 5		0
v(i2), Volume for stream 3 or 6		0
s(il), Saturation flow rate for stream 2 or 5	\	1700
s(i2), Saturation flow rate for stream 3 or 6		1700
P*(oj)		0.99
d(M,LT), Delay for stream 1 or 4		7.3
N, Number of major street through lanes		2
d(rank,1) Delay for stream 2 or 5		



