

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

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Run with file:-

"P:\Projects\7000-0710-64 Barton Farm, Winchester\PICADY\October 2009 Work\Stoney Lane\Existing Junction\
2023 Base + Dev AM & PM.vpi"
(drive-on-the-left) at 16:59:42 on Wednesday, 14 October 2009

RUN INFORMATION

RUN TITLE : Andover Road/Stoney Lane Junction Priority Junction 2023 AM & PM Base + Dev
LOCATION : Winchester
DATE : 22/05/09
CLIENT : Cala Homes (South) Limited
ENUMERATOR : mff
JOB NUMBER : 0710-64
STATUS :
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Andover Road (South)
ARM B IS Stoney Lane
ARM C IS Andover Road (North)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

 GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	(W) 6.00 M.	I
I	CENTRAL RESERVE WIDTH	I	(WCR) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	(WC-B) 2.20 M.	I
I	- VISIBILITY	I	(VC-B) 180.00 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 24.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 43.0 M.	I
I	- LANE 1 WIDTH	I	(WB-C) -	I
I	- LANE 2 WIDTH	I	(WB-A) -	I
I	WIDTH AT 0 M FROM JUNCTION	I	10.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.75 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	4.00 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.00 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.00 M.	I
I	- LENGTH OF FLARED SECTION	I	1 VEHS	I

 .SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I	
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B
I	0.00		0.00		0.00		0.00		0.00

* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	678.20		0.26		0.26	I

(NB These values do not allow for any site specific corrections)

 TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: Andover Road/Stoney Lane Junction Priority Junction

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

LENGTH OF TIME PERIOD - 90 MIN.
 LENGTH OF TIME SEGMENT - 15 MIN.

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	2.26	1.37	1.649		5.47	19.10	185.0		10.69
B-A	5.03	2.93	1.718		8.68	40.41	368.9		9.38
C-AB	20.24	20.05	1.009		3.18	25.54	283.6		0.76
C-A	0.00								
A-B	2.18								
A-C	6.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	2.26	1.21	1.864		19.10	34.84	404.6		23.36
B-A	5.03	2.65	1.898		40.41	76.12	874.0		22.49
C-AB	20.24	20.08	1.008		25.54	36.99	524.4		1.62
C-A	0.00								
A-B	2.18								
A-C	6.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.84	1.61	1.144		34.84	38.42	549.5		21.56
B-A	4.11	3.55	1.156		76.12	84.50	1204.7		21.13
C-AB	14.15	19.61	0.722		36.99	5.63	219.5		0.55
C-A	2.37								
A-B	1.78								
A-C	5.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	1.54	2.10	0.736		38.42	30.91	520.0		17.00
B-A	3.44	4.63	0.742		84.50	67.36	1139.0		16.63
C-AB	7.61	17.12	0.445		5.63	1.59	27.0		0.11
C-A	6.23								
A-B	1.49								
A-C	4.48								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.4
08.00	5.5 *****
08.15	19.1 *****
08.30	34.8 *****
08.45	38.4 *****
09.00	30.9 *****

 QUEUE FOR STREAM B-A

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	2.0	**
08.00	8.7	*****
08.15	40.4	*****
08.30	76.1	*****
08.45	84.5	*****
09.00	67.4	*****

 QUEUE FOR STREAM C-AB

TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
07.45	1.5	*
08.00	3.2	***
08.15	25.5	*****
08.30	37.0	*****
08.45	5.6	*****
09.00	1.6	**

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	I	I	I	I	I	I						
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)						
I	B-C	I	169.3	I	112.9	I	1715.8	I	10.13	I	1943.6	I	11.48	I
I	B-A	I	377.1	I	251.4	I	3699.6	I	9.81	I	4189.1	I	11.11	I
I	C-AB	I	1215.5	I	810.3	I	1123.2	I	0.92	I	1123.2	I	0.92	I
I	C-A	I	302.7	I	201.8	I		I		I		I		I
I	A-B	I	163.8	I	109.2	I		I		I		I		I
I	A-C	I	491.4	I	327.6	I		I		I		I		I
I	ALL	I	2719.8	I	1813.2	I	6538.5	I	2.40	I	7255.9	I	2.67	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*****END OF RUN*****

 .SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM
I							C-B	I
I	0.00		0.00		0.00		0.00	I

* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	678.20		0.26		0.26	I

(NB These values do not allow for any site specific corrections)

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	1.95	5.63	0.346		0.29	0.52	7.3		0.27
B-A	2.40	3.96	0.606		0.67	1.40	18.7		0.60
C-AB	4.06	12.10	0.335		0.55	0.92	13.8		0.12
C-A	4.50								
A-B	3.82								
A-C	11.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	2.39	2.10	1.138		0.52	7.99	72.0		2.95
B-A	2.94	2.63	1.118		1.40	9.12	85.7		2.82
C-AB	6.40	12.64	0.506		0.92	2.01	29.9		0.16
C-A	4.08								
A-B	4.68								
A-C	13.47								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	2.39	2.14	1.115		7.99	12.69	155.8		5.29
B-A	2.94	2.60	1.130		9.12	15.15	182.8		5.09
C-AB	6.45	12.68	0.509		2.01	2.07	31.7		0.16
C-A	4.03								
A-B	4.68								
A-C	13.47								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	1.95	3.06	0.636		12.69	2.27	95.6		2.66
B-A	2.40	3.51	0.684		15.15	3.06	128.0		2.95
C-AB	4.10	12.15	0.337		2.07	0.98	15.2		0.13
C-A	4.46								
A-B	3.82								
A-C	11.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.63	7.03	0.232		2.27	0.31	5.4		0.19
B-A	2.01	4.86	0.413		3.06	0.73	13.4		0.39
C-AB	2.87	11.78	0.244		0.98	0.58	8.7		0.11
C-A	4.29								
A-B	3.20								
A-C	9.21								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.5	*
17.00	8.0	*****
17.15	12.7	*****
17.30	2.3	**
17.45	0.3	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.4	*
17.00	9.1	*****
17.15	15.1	*****
17.30	3.1	***
17.45	0.7	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	*
16.45	0.9	*
17.00	2.0	**
17.15	2.1	**
17.30	1.0	*
17.45	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING * * DELAY *	I	* INCLUSIVE QUEUEING * * DELAY *	I		I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	B-C	I	178.9	I	119.3	I	340.3	I	1.90	I
I	B-A	I	220.2	I	146.8	I	437.6	I	1.99	I
I	C-AB	I	400.8	I	267.2	I	107.5	I	0.27	I
I	C-A	I	385.1	I	256.7	I		I		I
I	A-B	I	351.0	I	234.0	I		I		I
I	A-C	I	1010.3	I	673.5	I		I		I
I	ALL	I	2546.4	I	1697.6	I	885.4	I	0.35	I

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*****END OF RUN*****

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