

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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PROGRAM ADVICE AND MAINTENANCE CONTACT:

TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

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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 AM + PM.vpi"
(drive-on-the-left) at 16:58:52 on Wednesday, 14 October 2009

RUN INFORMATION

RUN TITLE : Andover Road/Stoney Lane Junction Priority Junction 2023 AM & PM Base
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	1.84	1.45	1.269		0.67	8.43	73.7		4.31
B-A	5.03	4.06	1.239		3.71	19.83	180.9		3.49
C-AB	9.06	17.14	0.528		1.06	2.17	32.5		0.12
C-A	5.75								
A-B	2.18								
A-C	5.36								

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	1.84	1.52	1.207		8.43	13.68	166.3		7.96
B-A	5.03	4.03	1.249		19.83	35.15	412.7		6.95
C-AB	9.12	17.18	0.531		2.17	2.23	34.1		0.13
C-A	5.69								
A-B	2.18								
A-C	5.36								

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	1.50	1.78	0.840		13.68	11.21	186.7		7.27
B-A	4.11	4.77	0.860		35.15	27.10	466.9		6.63
C-AB	5.78	15.92	0.363		2.23	1.12	17.2		0.10
C-A	6.31								
A-B	1.78								
A-C	4.38								

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	1.25	2.23	0.562		11.21	1.69	82.9		3.23
B-A	3.44	5.33	0.645		27.10	2.66	215.6		3.07
C-AB	4.03	15.00	0.269		1.12	0.68	10.3		0.09
C-A	6.09								
A-B	1.49								
A-C	3.66								

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	0.2	
08.00	0.7	*
08.15	8.4	*****
08.30	13.7	*****
08.45	11.2	*****
09.00	1.7	**

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	1.5	*
08.00	3.7	****
08.15	19.8	*****
08.30	35.2	*****
08.45	27.1	*****
09.00	2.7	***

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.7	*
08.00	1.1	*
08.15	2.2	**
08.30	2.2	**
08.45	1.1	*
09.00	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM I	TOTAL DEMAND I	* QUEUEING * I	* INCLUSIVE QUEUEING * I
I I	I I	* DELAY * I	* DELAY * I
I I	I I	I I	I I
I I	(VEH) (VEH/H) I	(MIN) (MIN/VEH) I	(MIN) (MIN/VEH) I
I B-C I	137.6 I 91.8 I	522.1 I 3.79 I	522.8 I 3.80 I
I B-A I	377.1 I 251.4 I	1340.5 I 3.55 I	1341.2 I 3.56 I
I C-AB I	565.8 I 377.2 I	119.7 I 0.21 I	119.7 I 0.21 I
I C-A I	545.0 I 363.3 I	I I	I I
I A-B I	163.8 I 109.2 I	I I	I I
I A-C I	401.9 I 267.9 I	I I	I I
I ALL I	2191.3 I 1460.8 I	1982.3 I 0.90 I	1983.6 I 0.91 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
I 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 B-A	STREAM A-C
I 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-B
I 678.20	0.26

(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	1.05	6.91	0.152		0.13	0.18	2.6		0.17
B-A	2.40	5.39	0.444		0.49	0.77	10.9		0.33
C-AB	2.13	11.36	0.187		0.27	0.39	5.9		0.11
C-A	4.06								
A-B	3.82								
A-C	7.37								

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	1.28	5.09	0.252		0.18	0.33	4.7		0.26
B-A	2.94	4.52	0.650		0.77	1.67	22.2		0.59
C-AB	3.09	11.66	0.265		0.39	0.66	9.9		0.12
C-A	4.49								
A-B	4.68								
A-C	9.03								

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	1.28	4.97	0.258		0.33	0.34	5.1		0.27
B-A	2.94	4.51	0.651		1.67	1.76	25.9		0.63
C-AB	3.10	11.67	0.265		0.66	0.66	10.1		0.12
C-A	4.48								
A-B	4.68								
A-C	9.03								

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	1.05	6.82	0.154		0.34	0.18	2.9		0.17
B-A	2.40	5.38	0.445		1.76	0.83	13.6		0.35
C-AB	2.13	11.37	0.188		0.66	0.41	6.1		0.11
C-A	4.05								
A-B	3.82								
A-C	7.37								

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	0.88	7.76	0.113		0.18	0.13	2.0		0.15
B-A	2.01	6.00	0.335		0.83	0.51	8.2		0.25
C-AB	1.60	11.20	0.143		0.41	0.28	4.1		0.10
C-A	3.58								
A-B	3.20								
A-C	6.17								

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	0.1
16.45	0.2
17.00	0.3
17.15	0.3
17.30	0.2
17.45	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.8	*
17.00	1.7	**
17.15	1.8	**
17.30	0.8	*
17.45	0.5	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.7	*
17.15	0.7	*
17.30	0.4	
17.45	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING * * DELAY *	I	* INCLUSIVE QUEUEING * * DELAY *	I		I
			(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)		
I	B-C	I	96.3	I	64.2	I	19.0	I	0.20	I
I	B-A	I	220.2	I	146.8	I	87.6	I	0.40	I
I	C-AB	I	204.6	I	136.4	I	40.1	I	0.20	I
I	C-A	I	363.9	I	242.6	I		I		I
I	A-B	I	351.0	I	234.0	I		I		I
I	A-C	I	677.2	I	451.5	I		I		I
I	ALL	I	1913.2	I	1275.5	I	146.7	I	0.08	I

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

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