

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:-

"E:\Projects\7000-0710-64 Barton Farm, Winchester\PICADY\October 2009 Work\Bereweek Road\Improved Junction\
2023 Base + Dev AM & PM.vpi"
(drive-on-the-left) at 16:20:56 on Wednesday, 14 October 2009

RUN INFORMATION

RUN TITLE : Andover Road/Bereweek Road Improved Junction 2023 AM & PM Base + Dev
LOCATION : Winchester
DATE : 26/05/09
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 Bereweek Road
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) 2.50 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) 22.0 M.	I
I	- VISIBILITY TO RIGHT	I	(VB-A) 19.0 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	4.00 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	2.50 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	2.50 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	2.50 M.	I
I	- LENGTH OF FLARED SECTION	I	DERIVED: 0 PCU	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	700.35		0.27		0.27	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/Berewecke Road 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	3.60	6.84	0.526		0.58	1.06	14.9		0.30
B-A	2.29	2.75	0.833		0.87	3.17	36.5		1.39
C-AB	4.46	9.25	0.482		0.61	0.99	14.7		0.21
A-B	1.47								
A-C	6.39								

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	3.60	6.71	0.536		1.06	1.12	16.5		0.32
B-A	2.29	2.74	0.836		3.17	3.77	52.7		1.81
C-AB	4.46	9.25	0.482		0.99	1.01	15.3		0.21
A-B	1.47								
A-C	6.39								

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	2.94	7.79	0.377		1.12	0.62	9.8		0.21
B-A	1.87	3.89	0.481		3.77	0.99	19.1		0.59
C-AB	3.64	9.64	0.378		1.01	0.64	9.7		0.17
A-B	1.20								
A-C	5.21								

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	2.46	8.45	0.291		0.62	0.42	6.5		0.17
B-A	1.57	4.73	0.332		0.99	0.51	8.2		0.32
C-AB	3.05	9.92	0.307		0.64	0.45	6.8		0.15
A-B	1.00								
A-C	4.37								

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	0.6 *
08.15	1.1 *
08.30	1.1 *
08.45	0.6 *
09.00	0.4

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.5
08.00	0.9 *
08.15	3.2 ***
08.30	3.8 ****
08.45	1.0 *
09.00	0.5 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.4	
08.00	0.6	*
08.15	1.0	*
08.30	1.0	*
08.45	0.6	*
09.00	0.5	

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	(VEH) (VEH/H) I	(MIN) (MIN/VEH) I	(MIN) (MIN/VEH) I
I B-C I	269.8 I 179.9 I	61.7 I 0.23 I	61.8 I 0.23 I
I B-A I	172.1 I 114.7 I	135.1 I 0.79 I	135.2 I 0.79 I
I C-AB I	334.5 I 223.0 I	62.2 I 0.19 I	62.2 I 0.19 I
I A-B I	110.1 I 73.4 I	I I	I I
I A-C I	479.0 I 319.3 I	I I	I I
I ALL I	2631.7 I 1754.5 I	259.1 I 0.10 I	259.2 I 0.10 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	Slope For Opposing I
I STREAM B-A STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B I
I 0.00 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 700.35 0.27	0.27 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

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	3.71	5.60	0.662		0.77	1.79	23.8		0.49
B-A	2.06	2.59	0.793		0.74	2.67	31.3		1.32
C-AB	2.97	7.20	0.413		0.43	0.71	10.5		0.23
A-B	2.24								
A-C	13.93								

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	3.71	5.51	0.673		1.79	1.93	28.2		0.55
B-A	2.06	2.59	0.795		2.67	3.09	43.6		1.64
C-AB	2.97	7.20	0.413		0.71	0.72	10.9		0.24
A-B	2.24								
A-C	13.93								

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	3.03	6.76	0.448		1.93	0.84	13.6		0.28
B-A	1.68	3.81	0.440		3.09	0.83	15.5		0.54
C-AB	2.43	8.01	0.303		0.72	0.45	6.8		0.18
A-B	1.83								
A-C	11.37								

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	2.53	7.57	0.335		0.84	0.51	8.1		0.20
B-A	1.41	4.71	0.298		0.83	0.44	7.0		0.31
C-AB	2.03	8.59	0.237		0.45	0.31	4.7		0.15
A-B	1.53								
A-C	9.52								

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	0.5
16.45	0.8 *
17.00	1.8 **
17.15	1.9 **
17.30	0.8 *
17.45	0.5 *

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.4
16.45	0.7 *
17.00	2.7 ***
17.15	3.1 ***
17.30	0.8 *
17.45	0.4

QUEUE FOR STREAM C-AB

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	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 *		I	* INCLUSIVE QUEUEING *		I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-C	I	278.0	185.4	I	91.5	0.33	I	91.5	0.33	I
I	B-A	I	154.2	102.8	I	113.4	0.74	I	113.4	0.74	I
I	C-AB	I	223.0	148.7	I	44.0	0.20	I	44.0	0.20	I
I	A-B	I	167.9	111.9	I			I			I
I	A-C	I	1044.7	696.5	I			I			I
I	ALL	I	2604.2	1736.1	I	248.9	0.10	I	248.9	0.10	I

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 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*****

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