

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 AM & PM.vpi"
(drive-on-the-left) at 16:19:52 on Wednesday, 14 October 2009

RUN INFORMATION

RUN TITLE : Andover Road/Bereweek Road Improved Junction 2023 AM & PM Base
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	3.16	7.53	0.419		0.45	0.70	10.1		0.23
B-A	2.29	3.95	0.581		0.60	1.28	17.1		0.57
C-AB	3.01	9.39	0.320		0.33	0.47	7.1		0.16
A-B	1.47								
A-C	5.63								

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	3.16	7.50	0.421		0.70	0.72	10.7		0.23
B-A	2.29	3.94	0.582		1.28	1.33	19.6		0.60
C-AB	3.01	9.39	0.320		0.47	0.48	7.2		0.16
A-B	1.47								
A-C	5.63								

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	2.58	8.20	0.314		0.72	0.47	7.3		0.18
B-A	1.87	4.87	0.384		1.33	0.65	10.5		0.34
C-AB	2.46	9.74	0.252		0.48	0.34	5.2		0.14
A-B	1.20								
A-C	4.60								

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	2.16	8.64	0.250		0.47	0.34	5.2		0.15
B-A	1.57	5.55	0.283		0.65	0.40	6.4		0.25
C-AB	2.06	10.00	0.206		0.34	0.26	3.9		0.13
A-B	1.00								
A-C	3.85								

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	0.3
08.00	0.4
08.15	0.7 *
08.30	0.7 *
08.45	0.5
09.00	0.3

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.4
08.00	0.6 *
08.15	1.3 *
08.30	1.3 *
08.45	0.6 *
09.00	0.4

QUEUE FOR STREAM C-AB

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
07.45	0.3
08.00	0.3
08.15	0.5
08.30	0.5
08.45	0.3
09.00	0.3

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	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I	236.7	I 157.8	I 44.5	I 0.19	I 44.5	I 0.19
I	B-A	I	172.1	I 114.7	I 67.5	I 0.39	I 67.5	I 0.39
I	C-AB	I	225.7	I 150.5	I 32.2	I 0.14	I 32.2	I 0.14
I	A-B	I	110.1	I 73.4	I	I	I	I
I	A-C	I	422.6	I 281.7	I	I	I	I
I	ALL	I	2209.2	I 1472.8	I 144.2	I 0.07	I 144.2	I 0.07

* 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	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	2.24	6.71	0.334		0.31	0.49	7.0		0.22
B-A	2.06	3.89	0.529		0.51	1.05	14.2		0.53
C-AB	2.18	7.98	0.274		0.26	0.37	5.6		0.17
A-B	2.24								
A-C	10.96								

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	2.24	6.69	0.335		0.49	0.50	7.4		0.22
B-A	2.06	3.88	0.529		1.05	1.08	16.0		0.54
C-AB	2.18	7.98	0.274		0.37	0.38	5.7		0.17
A-B	2.24								
A-C	10.96								

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	1.83	7.55	0.242		0.50	0.32	5.1		0.18
B-A	1.68	4.87	0.344		1.08	0.54	8.7		0.32
C-AB	1.78	8.64	0.206		0.38	0.26	4.0		0.15
A-B	1.83								
A-C	8.94								

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	1.53	8.13	0.188		0.32	0.23	3.6		0.15
B-A	1.41	5.59	0.251		0.54	0.34	5.4		0.24
C-AB	1.49	9.11	0.164		0.26	0.20	3.0		0.13
A-B	1.53								
A-C	7.49								

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	0.2
16.45	0.3
17.00	0.5
17.15	0.5
17.30	0.3
17.45	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.5	*
17.00	1.0	*
17.15	1.1	*
17.30	0.5	*
17.45	0.3	

QUEUE FOR STREAM C-AB

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.4
17.15	0.4
17.30	0.3
17.45	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND		I	* QUEUEING *		I	* INCLUSIVE QUEUEING *		I		
I	I	I	(VEH)	(VEH/H)	I	* DELAY *	(MIN)	(MIN/VEH)	I	* DELAY *	(MIN)	(MIN/VEH)	I
I	B-C	I	167.9	111.9	I	31.0	0.18	I	31.0	I	0.18	I	
I	B-A	I	154.2	102.8	I	56.2	0.36	I	56.2	I	0.36	I	
I	C-AB	I	163.8	109.2	I	25.0	0.15	I	25.0	I	0.15	I	
I	A-B	I	167.9	111.9	I			I		I		I	
I	A-C	I	821.7	547.8	I			I		I		I	
I	ALL	I	2107.3	1404.9	I	112.2	0.05	I	112.2	I	0.05	I	

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 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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

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