

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:-
"C:\E DRIVE DOCS\WORKING JOB FILES\Bicester\Oct 2010 onwards\Junction Capacity\Site 3\Existing Rnbt\
Site 3 Banbury Road Lords Lane.vai"
(drive-on-the-left) at 09:37:13 on Wednesday, 24 November 2010

FILE PROPERTIES

RUN TITLE: Banbury Road Roundabout
LOCATION: Bicester
DATE: 05/07/10
CLIENT:
ENUMERATOR: mba24773 [HCL56181]
JOB NUMBER: UA001881
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Arm Southwold Lane A4095
ARM B - Banbury Road B4100 (South)
ARM C - Lords Lane A4095
ARM D - B4100 (North)

GEOMETRIC DATA

I	ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I	ARM A	I	3.70	I	7.80	I	15.80	I	13.30	I	40.00	I	17.0	I	0.675	I	30.611	I
I	ARM B	I	3.65	I	7.40	I	20.40	I	14.50	I	40.00	I	24.0	I	0.668	I	30.425	I
I	ARM C	I	4.30	I	6.30	I	10.40	I	34.40	I	40.00	I	16.0	I	0.682	I	29.899	I
I	ARM D	I	3.30	I	7.10	I	19.30	I	21.20	I	40.00	I	10.0	I	0.690	I	30.490	I

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

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

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2016 No Dev AM

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS IF FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.74	14.61	9.74
ARM B	15.00	45.00	75.00	3.91	5.87	3.91
ARM C	15.00	45.00	75.00	7.16	10.74	7.16
ARM D	15.00	45.00	75.00	11.49	17.23	11.49

DEMAND SET TITLE: 2016 No Dev AM

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.032 25.0 (0.0)	0.150 117.0 (0.0)	0.466 363.0 (3.0)	0.352 274.0 (4.0)
	ARM B	0.361 113.0 (0.0)	0.000 0.0 (0.0)	0.243 76.0 (0.0)	0.396 124.0 (0.0)
	ARM C	0.702 402.0 (2.0)	0.138 79.0 (1.0)	0.000 0.0 (0.0)	0.161 92.0 (6.0)
	ARM D	0.558 513.0 (7.0)	0.333 306.0 (2.0)	0.107 98.0 (3.0)	0.002 2.0 (33.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

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)
07.45-08.00									
ARM A	9.74	25.73	0.378		0.0	0.6	8.8		0.06
ARM B	3.91	23.88	0.164		0.0	0.2	2.9		0.05
ARM C	7.16	24.62	0.291		0.0	0.4	6.0		0.06
ARM D	11.49	23.91	0.480		0.0	0.9	13.2		0.08

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									
ARM A	11.63	24.93	0.466		0.6	0.9	12.7		0.07
ARM B	4.67	22.59	0.207		0.2	0.3	3.8		0.06
ARM C	8.55	23.72	0.361		0.4	0.6	8.2		0.07
ARM D	13.72	22.90	0.599		0.9	1.5	21.2		0.11

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									
ARM A	14.24	23.86	0.597		0.9	1.5	21.0		0.10
ARM B	5.72	20.85	0.274		0.3	0.4	5.5		0.07
ARM C	10.47	22.50	0.466		0.6	0.9	12.6		0.08
ARM D	16.80	21.52	0.781		1.5	3.4	45.8		0.20

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									
ARM A	14.24	23.83	0.598		1.5	1.5	22.0		0.10
ARM B	5.72	20.82	0.275		0.4	0.4	5.7		0.07
ARM C	10.47	22.49	0.466		0.9	0.9	13.0		0.08
ARM D	16.80	21.51	0.781		3.4	3.5	51.3		0.21

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									
ARM A	11.63	24.88	0.467		1.5	0.9	13.7		0.08
ARM B	4.67	22.55	0.207		0.4	0.3	4.0		0.06
ARM C	8.55	23.70	0.361		0.9	0.6	8.7		0.07
ARM D	13.72	22.88	0.600		3.5	1.5	24.2		0.11

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)
09.00-09.15									
ARM A	9.74	25.69	0.379		0.9	0.6	9.4		0.06
ARM B	3.91	23.84	0.164		0.3	0.2	3.0		0.05
ARM C	7.16	24.59	0.291		0.6	0.4	6.3		0.06
ARM D	11.49	23.88	0.481		1.5	0.9	14.5		0.08

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.6 *
08.15	0.9 *
08.30	1.5 *
08.45	1.5 *
09.00	0.9 *
09.15	0.6 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.2
08.15	0.3
08.30	0.4
08.45	0.4
09.00	0.3
09.15	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.4
08.15	0.6 *
08.30	0.9 *
08.45	0.9 *
09.00	0.6 *
09.15	0.4

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.9 *
08.15	1.5 *
08.30	3.4 ***
08.45	3.5 ***
09.00	1.5 **
09.15	0.9 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING * * DELAY *	I	* INCLUSIVE QUEUEING * * DELAY *	I
I		I		I		I		I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	A	I	1068.2	I	87.6	I	87.6	I
I	B	I	429.2	I	24.9	I	24.9	I
I	C	I	785.7	I	54.8	I	54.8	I
I	D	I	1260.1	I	170.1	I	170.2	I
I	ALL	I	3543.2	I	337.5	I	337.5	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 JOB

===== end of file =====

[Printed at 09:37:53 on 24/11/2010]