

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 4\Existing Rnbt\
Site 4 Ex Rnbt.vai"
(drive-on-the-left) at 09:50:55 on Wednesday, 24 November 2010

FILE PROPERTIES

RUN TITLE: Skimmingdish Lane Roundabout
LOCATION: Bicester
DATE: 09/11/10
CLIENT:
ENUMERATOR:
JOB NUMBER: UA001881
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - A4421 north
ARM B - A4095 Skimmingdish Lane
ARM C - A4421 Buckingham Road
ARM D - Southwold Lane A4095

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	3.50	I	7.60	I	18.00	I	42.50	I	50.00	I	15.0	I	0.672	I	31.962	I
I	ARM B	I	3.50	I	8.80	I	21.80	I	15.00	I	50.00	I	37.5	I	0.631	I	31.343	I
I	ARM C	I	3.35	I	7.67	I	30.00	I	21.00	I	50.00	I	32.5	I	0.644	I	31.650	I
I	ARM D	I	3.45	I	8.13	I	15.80	I	25.00	I	50.00	I	26.0	I	0.637	I	30.255	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)

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

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 w/o devt AM

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS IF FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	11.43	I	17.14	I	11.43	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	7.01	I	10.52	I	7.01	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.43	I	9.64	I	6.43	I
I	ARM D	I	15.00	I	45.00	I	75.00	I	13.44	I	20.16	I	13.44	I

DEMAND SET TITLE: 2016 w/o devt AM

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I	ARM D	I
I	07.45 - 09.15	I	ARM A	I	0.000	I	0.501	I	0.360	I	0.139	I
I		I		I	0.0	I	458.0	I	329.0	I	127.0	I
I		I	(0.0)	I	(6.9)	I	(1.9)	I	(5.7)	I		I
I		I	ARM B	I	0.360	I	0.000	I	0.036	I	0.604	I
I		I		I	202.0	I	0.0	I	20.0	I	339.0	I
I		I	(14.2)	I	(0.0)	I	(4.5)	I	(6.1)	I		I
I		I	ARM C	I	0.508	I	0.154	I	0.000	I	0.339	I
I		I		I	261.0	I	79.0	I	0.0	I	174.0	I
I		I	(2.4)	I	(0.0)	I	(0.0)	I	(0.0)	I		I
I		I	ARM D	I	0.121	I	0.759	I	0.120	I	0.000	I
I		I		I	130.0	I	816.0	I	129.0	I	0.0	I
I		I	(2.1)	I	(4.7)	I	(0.7)	I	(0.0)	I		I

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I	TIME	I	DEMAND (VEH/MIN)	I	CAPACITY (VEH/MIN)	I	DEMAND/CAPACITY (RFC)	I	PEDESTRIAN FLOW (PEDS/MIN)	I	START QUEUE (VEHS)	I	END QUEUE (VEHS)	I	DELAY (VEH.MIN/ TIME SEGMENT)	I	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	07.45-08.00	I		I		I		I		I		I		I		I		I		I
I	ARM A	I	11.43	I	21.99	I	0.519	I		I	0.0	I	1.1	I	15.3	I		I	0.09	I
I	ARM B	I	7.01	I	24.46	I	0.287	I		I	0.0	I	0.4	I	5.9	I		I	0.06	I
I	ARM C	I	6.43	I	25.53	I	0.252	I		I	0.0	I	0.3	I	4.9	I		I	0.05	I
I	ARM D	I	13.44	I	24.71	I	0.544	I		I	0.0	I	1.2	I	16.9	I		I	0.09	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)
08.00-08.15									
ARM A	13.64	20.33	0.671		1.1	2.0	28.1		0.15
ARM B	8.37	23.61	0.355		0.4	0.5	8.0		0.07
ARM C	7.67	24.40	0.314		0.3	0.5	6.7		0.06
ARM D	16.05	23.84	0.673		1.2	2.0	28.6		0.13

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	16.71	18.16	0.920		2.0	8.2	96.3		0.46
ARM B	10.26	22.56	0.454		0.5	0.8	12.1		0.08
ARM C	9.40	22.89	0.411		0.5	0.7	10.1		0.07
ARM D	19.65	22.66	0.867		2.0	5.7	73.4		0.29

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	16.71	18.02	0.927		8.2	9.8	136.7		0.63
ARM B	10.26	22.46	0.457		0.8	0.8	12.5		0.08
ARM C	9.40	22.85	0.411		0.7	0.7	10.4		0.07
ARM D	19.65	22.65	0.868		5.7	6.1	88.9		0.32

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	13.64	20.14	0.677		9.8	2.2	40.5		0.18
ARM B	8.37	23.42	0.358		0.8	0.6	8.6		0.07
ARM C	7.67	24.32	0.315		0.7	0.5	7.1		0.06
ARM D	16.05	23.83	0.673		6.1	2.1	35.0		0.14

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	11.43	21.91	0.521		2.2	1.1	17.2		0.10
ARM B	7.01	24.40	0.287		0.6	0.4	6.2		0.06
ARM C	6.43	25.49	0.252		0.5	0.3	5.2		0.05
ARM D	13.44	24.69	0.544		2.1	1.2	18.8		0.09

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	1.1 *
08.15	2.0 **
08.30	8.2 *****
08.45	9.8 *****
09.00	2.2 **
09.15	1.1 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.4
08.15	0.5 *
08.30	0.8 *
08.45	0.8 *
09.00	0.6 *
09.15	0.4

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.3
08.15	0.5
08.30	0.7 *
08.45	0.7 *
09.00	0.5
09.15	0.3

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	1.2 *
08.15	2.0 **
08.30	5.7 *****
08.45	6.1 *****
09.00	2.1 **
09.15	1.2 *

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	1253.3	I	835.5	I	334.2	I
I	B	I	769.2	I	512.8	I	53.2	I
I	C	I	704.8	I	469.9	I	44.4	I
I	D	I	1474.1	I	982.7	I	261.6	I
I	ALL	I	4201.4	I	2800.9	I	693.5	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 09:51:17 on 24/11/2010]