

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 Base 2010.vai"
(drive-on-the-left) at 09:49:52 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 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: Base 2010 PM

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	6.64	I	9.96	I	6.64	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	14.10	I	21.15	I	14.10	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.16	I	9.24	I	6.16	I
I	ARM D	I	15.00	I	45.00	I	75.00	I	7.69	I	11.53	I	7.69	I

DEMAND SET TITLE: Base 2010 PM

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I	ARM D	I
I	16.45 - 18.15	I	ARM A	I	0.000	I	0.362	I	0.369	I	0.269	I
I		I		I	0.0	I	192.0	I	196.0	I	143.0	I
I		I		I	(0.0)	I	(8.2)	I	(2.7)	I	(3.7)	I
I		I	ARM B	I	0.399	I	0.000	I	0.046	I	0.555	I
I		I		I	450.0	I	0.0	I	52.0	I	626.0	I
I		I		I	(6.5)	I	(0.0)	I	(0.0)	I	(1.9)	I
I		I	ARM C	I	0.596	I	0.079	I	0.000	I	0.325	I
I		I		I	294.0	I	39.0	I	0.0	I	160.0	I
I		I		I	(0.3)	I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	ARM D	I	0.197	I	0.595	I	0.207	I	0.002	I
I		I		I	121.0	I	366.0	I	127.0	I	1.0	I
I		I		I	(4.3)	I	(4.7)	I	(0.0)	I	(0.0)	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	16.45-17.00	I	ARM A	I	6.64	I	26.07	I	0.255	I	0.0	I	0.3	I	5.0	I		I	0.05	I
I		I	ARM B	I	14.10	I	26.62	I	0.530	I	0.0	I	1.1	I	16.1	I		I	0.08	I
I		I	ARM C	I	6.16	I	21.46	I	0.287	I	0.0	I	0.4	I	5.9	I		I	0.07	I
I		I	ARM D	I	7.69	I	22.97	I	0.335	I	0.0	I	0.5	I	7.3	I		I	0.07	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)
17.00-17.15									
ARM A	7.93	25.20	0.314		0.3	0.5	6.7		0.06
ARM B	16.84	25.91	0.650		1.1	1.8	26.1		0.11
ARM C	7.36	19.47	0.378		0.4	0.6	8.8		0.08
ARM D	9.18	21.75	0.422		0.5	0.7	10.6		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)
17.15-17.30									
ARM A	9.71	24.03	0.404		0.5	0.7	9.9		0.07
ARM B	20.62	24.94	0.827		1.8	4.4	59.2		0.21
ARM C	9.01	16.82	0.536		0.6	1.1	16.3		0.13
ARM D	11.24	20.11	0.559		0.7	1.2	18.0		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)
17.30-17.45									
ARM A	9.71	24.01	0.404		0.7	0.7	10.1		0.07
ARM B	20.62	24.93	0.827		4.4	4.6	67.8		0.23
ARM C	9.01	16.71	0.539		1.1	1.2	17.2		0.13
ARM D	11.24	20.06	0.561		1.2	1.3	18.9		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)
17.45-18.00									
ARM A	7.93	25.17	0.315		0.7	0.5	7.1		0.06
ARM B	16.84	25.89	0.650		4.6	1.9	30.4		0.11
ARM C	7.36	19.32	0.381		1.2	0.6	9.6		0.08
ARM D	9.18	21.67	0.424		1.3	0.7	11.5		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)
18.00-18.15									
ARM A	6.64	26.04	0.255		0.5	0.3	5.2		0.05
ARM B	14.10	26.60	0.530		1.9	1.1	17.7		0.08
ARM C	6.16	21.38	0.288		0.6	0.4	6.2		0.07
ARM D	7.69	22.92	0.335		0.7	0.5	7.8		0.07

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.5
17.30	0.7 *
17.45	0.7 *
18.00	0.5
18.15	0.3

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	1.1 *
17.15	1.8 **
17.30	4.4 ****
17.45	4.6 *****
18.00	1.9 **
18.15	1.1 *

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.4
17.15	0.6 *
17.30	1.1 *
17.45	1.2 *
18.00	0.6 *
18.15	0.4

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.5
17.15	0.7 *
17.30	1.2 *
17.45	1.3 *
18.00	0.7 *
18.15	0.5 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND	* QUEUEING * * DELAY *	* INCLUSIVE QUEUEING * * DELAY *
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
A	728.1	44.0	0.06
B	1546.7	217.3	0.14
C	676.0	64.1	0.09
D	843.3	74.0	0.09
ALL	3794.1	399.3	0.11

* 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 09:50:10 on 24/11/2010]