

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 Base Years.vai"
(drive-on-the-left) at 09:33:16 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)

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: AM 2010 Base

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	7.84	I	11.76	I	7.84	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.15	I	4.73	I	3.15	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.78	I	8.66	I	5.78	I
I	ARM D	I	15.00	I	45.00	I	75.00	I	9.25	I	13.88	I	9.25	I

DEMAND SET TITLE: AM 2010 Base

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	0.032	I	0.150	I	0.466	I	0.352	I
I		I		I	20.0	I	94.0	I	292.0	I	221.0	I
I		I		I	(0.0)	I	(0.0)	I	(3.0)	I	(4.0)	I
I		I	ARM B	I	0.361	I	0.000	I	0.242	I	0.397	I
I		I		I	91.0	I	0.0	I	61.0	I	100.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	ARM C	I	0.701	I	0.139	I	0.000	I	0.160	I
I		I		I	324.0	I	64.0	I	0.0	I	74.0	I
I		I		I	(2.0)	I	(2.0)	I	(0.0)	I	(5.0)	I
I		I	ARM D	I	0.558	I	0.332	I	0.107	I	0.003	I
I		I		I	413.0	I	246.0	I	79.0	I	2.0	I
I		I		I	(7.0)	I	(2.0)	I	(3.0)	I	(50.0)	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	07.45-08.00	I		I		I		I		I		I		I		I		I		I
I	ARM A	I	7.84	I	26.50	I	0.296	I		I	0.0	I	0.4	I	6.1	I		I	0.05	I
I	ARM B	I	3.15	I	25.15	I	0.125	I		I	0.0	I	0.1	I	2.1	I		I	0.05	I
I	ARM C	I	5.78	I	25.50	I	0.226	I		I	0.0	I	0.3	I	4.3	I		I	0.05	I
I	ARM D	I	9.25	I	24.89	I	0.372	I		I	0.0	I	0.6	I	8.6	I		I	0.06	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	9.36	25.85	0.362		0.4	0.6	8.3		0.06
ARM B	3.76	24.10	0.156		0.1	0.2	2.7		0.05
ARM C	6.90	24.77	0.278		0.3	0.4	5.7		0.06
ARM D	11.05	24.07	0.459		0.6	0.8	12.3		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)
08.15-08.30									
ARM A	11.46	24.98	0.459		0.6	0.8	12.3		0.07
ARM B	4.61	22.69	0.203		0.2	0.3	3.7		0.06
ARM C	8.45	23.79	0.355		0.4	0.5	8.0		0.07
ARM D	13.53	22.96	0.589		0.8	1.4	20.3		0.11

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08.30-08.45									
ARM A	11.46	24.96	0.459		0.8	0.8	12.6		0.07
ARM B	4.61	22.68	0.203		0.3	0.3	3.8		0.06
ARM C	8.45	23.78	0.355		0.5	0.5	8.2		0.07
ARM D	13.53	22.95	0.589		1.4	1.4	21.3		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)
08.45-09.00									
ARM A	9.36	25.84	0.362		0.8	0.6	8.8		0.06
ARM B	3.76	24.08	0.156		0.3	0.2	2.8		0.05
ARM C	6.90	24.76	0.278		0.5	0.4	5.9		0.06
ARM D	11.05	24.06	0.459		1.4	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)
09.00-09.15									
ARM A	7.84	26.48	0.296		0.6	0.4	6.4		0.05
ARM B	3.15	25.12	0.125		0.2	0.1	2.2		0.05
ARM C	5.78	25.48	0.227		0.4	0.3	4.5		0.05
ARM D	9.25	24.87	0.372		0.9	0.6	9.1		0.06

QUEUE AT ARM A

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

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.3
08.45	0.3
09.00	0.2
09.15	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.3
08.15	0.4
08.30	0.5 *
08.45	0.5 *
09.00	0.4
09.15	0.3

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.6 *
08.15	0.8 *
08.30	1.4 *
08.45	1.4 *
09.00	0.9 *
09.15	0.6 *

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING * * DELAY *	I	* INCLUSIVE QUEUEING * * DELAY *	I
I		I		I	(MIN)	I	(MIN)	I
I		I	(VEH)	I	(VEH/H)	I	(MIN/VEH)	I
I	A	I	859.7	I	573.2	I	54.6	I
I	B	I	345.5	I	230.4	I	17.4	I
I	C	I	633.5	I	422.3	I	36.6	I
I	D	I	1014.7	I	676.5	I	84.9	I
I	ALL	I	2853.5	I	1902.3	I	193.5	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 =====