

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 2a\Existing\
Site 2a Bucknell Road rev2 Exemplar ms edit.vai"
(drive-on-the-left) at 09:20:15 on Wednesday, 24 November 2010

FILE PROPERTIES

RUN TITLE: Bucknell Road Roundabout
LOCATION:
DATE: 06/07/10
CLIENT:
ENUMERATOR: mba24773 [HCL56181]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Lords Lane (east) A4095
ARM B - Bucknell Road (south) A4095
ARM C - Bucknell Road (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	4.20	I	6.00	I	13.30	I	22.20	I	31.00	I	25.0	I	0.662	I	28.165	I
I	ARM B	I	3.00	I	7.34	I	9.80	I	41.10	I	31.00	I	19.0	I	0.645	I	25.750	I
I	ARM C	I	2.80	I	9.10	I	10.80	I	66.60	I	31.00	I	18.0	I	0.666	I	27.153	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

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: 2016 PM without Exemplar

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	I FLOW STARTS I TOP OF PEAK I FLOW STOPS	I	BEFORE I AT TOP I AFTER	I
I	I	I TO RISE I IS REACHED IF FALLING	I	PEAK I OF PEAK I PEAK	I
I	ARM A	I 15.00 I 45.00 I 75.00	I	7.46 I 11.19 I 7.46	I
I	ARM B	I 15.00 I 45.00 I 75.00	I	8.60 I 12.90 I 8.60	I
I	ARM C	I 15.00 I 45.00 I 75.00	I	1.54 I 2.31 I 1.54	I

DEMAND SET TITLE: 2016 PM without Exemplar

I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS (VEH/HR)	I
I	I	(PERCENTAGE OF H.V.S)	I
I	TIME	I FROM/TO I ARM A I ARM B I ARM C	I
I	16.45 - 18.15	I	I
I		I ARM A I 0.000 I 0.926 I 0.074	I
I		I I 0.0 I 553.0 I 44.0	I
I		I I (0.0) I (6.0) I (0.0)	I
I		I I I I	I
I		I ARM B I 0.908 I 0.000 I 0.092	I
I		I I 625.0 I 0.0 I 63.0	I
I		I I (12.0) I (0.0) I (1.0)	I
I		I I I I	I
I		I ARM C I 0.407 I 0.593 I 0.000	I
I		I I 50.0 I 73.0 I 0.0	I
I		I I (1.0) I (0.0) I (0.0)	I
I		I I I I	I

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

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)	I
I	16.45-17.00										I
I	ARM A	7.46	26.11	0.286		0.0	0.4	5.8		0.05	I
I	ARM B	8.60	22.88	0.376		0.0	0.6	8.7		0.07	I
I	ARM C	1.54	21.27	0.072		0.0	0.1	1.1		0.05	I

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)	I
I	17.00-17.15										I
I	ARM A	8.91	26.00	0.343		0.4	0.5	7.7		0.06	I
I	ARM B	10.27	22.82	0.450		0.6	0.8	11.9		0.08	I
I	ARM C	1.84	20.12	0.091		0.1	0.1	1.5		0.05	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)
17.15-17.30									
ARM A	10.91	25.85	0.422		0.5	0.7	10.7		0.07
ARM B	12.58	22.73	0.553		0.8	1.2	17.7		0.10
ARM C	2.25	18.58	0.121		0.1	0.1	2.0		0.06

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	10.91	25.85	0.422		0.7	0.7	10.9		0.07
ARM B	12.58	22.73	0.553		1.2	1.2	18.4		0.10
ARM C	2.25	18.56	0.121		0.1	0.1	2.1		0.06

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	8.91	26.00	0.343		0.7	0.5	8.0		0.06
ARM B	10.27	22.82	0.450		1.2	0.8	12.7		0.08
ARM C	1.84	20.10	0.091		0.1	0.1	1.5		0.05

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	7.46	26.11	0.286		0.5	0.4	6.1		0.05
ARM B	8.60	22.88	0.376		0.8	0.6	9.3		0.07
ARM C	1.54	21.23	0.072		0.1	0.1	1.2		0.05

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.4
17.15	0.5 *
17.30	0.7 *
17.45	0.7 *
18.00	0.5 *
18.15	0.4

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.6 *
17.15	0.8 *
17.30	1.2 *
17.45	1.2 *
18.00	0.8 *
18.15	0.6 *

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I		I		I	* DELAY *	I	* DELAY *	I
I		I	(VEH)	I	(MIN)	I	(MIN)	I
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I
I	A	I	818.6	I	545.7	I	49.2	I
I	B	I	943.4	I	628.9	I	78.7	I
I	C	I	168.7	I	112.4	I	9.4	I
I	ALL	I	1930.7	I	1287.1	I	137.4	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 09:20:39 on 24/11/2010]