



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

(c) Copyright TRL Limited, 2004

Adapted from ARCADY/3 which is Crown Copyright
by permission of the controller of HMSO

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA, UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
10.Broad St_Gladstone Rd\Dock View Road Gyrotory\Holton Rd_Dock View Rd.vai"
(drive-on-the-left) at 12:21:18 on Tuesday, 14 July 2009

.FILE PROPERTIES

RUN TITLE: Holton Road / Dock View Road
LOCATION:
DATE: 14/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER: 122374
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Gladstone rndbt (W)
ARM B - Holton Road (E)
ARM C - Dock View Rd (S)

.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	7.68	I	7.93	I	0.10	I	999.00	I	29.50	I	19.0	I	0.856	I	42.275	I
I	ARM	B	I	3.00 *	I	3.00	I	0.10	I	14.00	I	29.50	I	16.5	I	0.509	I	15.542	I
I	ARM	C	I	3.70	I	3.70	I	0.00	I	14.00	I	29.50	I	15.0	I	0.557	I	19.266	I

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

WARNING ARM B - INPUT VALUE OF V (4.25) OUTSIDE ACCEPTABLE RANGE -
HAS BEEN RESET AS INDICATED ABOVE (*). (AG17 REF. 6.3.1).

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

----- T13

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

.TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD - (90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 with Development

----- T15

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK	
I	ARM	A	I	15.00	I	45.00	I	75.00	I	7.57	I	11.36	I	7.57
I	ARM	B	I	15.00	I	45.00	I	75.00	I	6.07	I	9.11	I	6.07
I	ARM	C	I	15.00	I	45.00	I	75.00	I	3.11	I	4.67	I	3.11

DEMAND SET TITLE: AM 2020 with Development

T33

TIME	FROM/TO	TURNING PROPORTIONS		
		ARM A	ARM B	ARM C
08.15 - 09.45	ARM A	0.000	0.094	0.906
		(0.0)	(0.0)	(1.0)
		0.0	57.0	549.0
08.15 - 09.45	ARM B	0.883	0.000	0.117
		(6.0)	(0.0)	(2.0)
		429.0	0.0	57.0
08.15 - 09.45	ARM C	1.000	0.000	0.000
		(2.0)	(0.0)	(0.0)
		249.0	0.0	0.0

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

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	7.60	41.90	0.181	--	0.0	0.2	3.3	-	0.029
ARM B	6.10	11.38	0.536	--	0.0	1.1	15.7	-	0.184
ARM C	3.12	15.81	0.198	--	0.0	0.2	3.6	-	0.079

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	9.08	41.90	0.217	--	0.2	0.3	4.1	-	0.030
ARM B	7.28	10.72	0.679	--	1.1	2.0	27.7	-	0.281
ARM C	3.73	15.20	0.245	--	0.2	0.3	4.7	-	0.087

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	11.12	41.90	0.265	--	0.3	0.4	5.3	-	0.032
ARM B	8.92	9.82	0.908	--	2.0	6.5	76.0	-	0.703
ARM C	4.57	14.49	0.315	--	0.3	0.5	6.7	-	0.101

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	11.12	41.90	0.265	--	0.4	0.4	5.4	-	0.032
ARM B	8.92	9.82	0.908	--	6.5	7.6	106.6	-	0.912
ARM C	4.57	14.37	0.318	--	0.5	0.5	6.9	-	0.102

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)
09.15-09.30									
ARM A	9.08	41.90	0.217	--	0.4	0.3	4.2	-	0.030
ARM B	7.28	10.72	0.680	--	7.6	2.2	42.3	-	0.358
ARM C	3.73	14.99	0.249	--	0.5	0.3	5.1	-	0.089

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)
09.30-09.45									
ARM A	7.60	41.90	0.181	--	0.3	0.2	3.4	-	0.029
ARM B	6.10	11.37	0.536	--	2.2	1.2	18.9	-	0.194
ARM C	3.12	15.74	0.199	--	0.3	0.2	3.8	-	0.079

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.3
09.00	0.4
09.15	0.4
09.30	0.3
09.45	0.2

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES
---------------------	-----------------

IN QUEUE

08.30	1.1	*
08.45	2.0	**
09.00	6.5	*****
09.15	7.6	*****
09.30	2.2	**
09.45	1.2	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.3
09.00	0.5
09.15	0.5
09.30	0.3
09.45	0.2

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75
I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		I
I	I	I	I	I	* DELAY *	I	* DELAY *	I		I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)		I
I	A	I	834.1	I	556.1	I	25.7	I	0.03	I
I	B	I	668.9	I	446.0	I	287.2	I	0.43	I
I	C	I	342.7	I	228.5	I	30.8	I	0.09	I
I	ALL	I	1845.8	I	1230.5	I	343.8	I	0.19	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