

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\9.Ship Gyratory\
Harbour Road_Broad St Junction\Harbour Road_Broad Street Junction.vai"
(drive-on-the-left) at 14:56:20 on Wednesday, 15 July 2009

.FILE PROPERTIES

RUN TITLE: Ship Gyratory_ Harbour Road/Broad Street Junction
LOCATION:
DATE: 13/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Broad Street (E)
ARM B - Harbour Rd - exit only (S)
ARM C - Dummy Arm - Circulatory flow only (W)

.GEOMETRIC DATA

ARM B IS JUNCTION EXIT ONLY

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	5.36	I	5.67	I	37.90	I	23.50	I	35.00	I	35.0	I	0.648	I	28.306	I
I	ARM C	I	5.32	I	5.32	I	0.00	I	9.20	I	35.00	I	80.0	I	0.487	I	20.663	I

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

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

.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(16.15)AND ENDS(17.45)
.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: PM 2020 with Development+Tourism

----- T15

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I
I	ARM	I	FLOW STOPS	I	BEFORE	I
I	ARM	I	AT TOP	I	AFTER	I
I	ARM	I	TO RISE	I	IS REACHED	I
I	ARM	I	FALLING	I	PEAK	I
I	ARM	I	OF PEAK	I	PEAK	I
I	ARM A	I	15.00	I	45.00	I
I	ARM C	I	15.00	I	45.00	I

DEMAND SET TITLE: PM 2020 with Development+Tourism

T33

TIME	FROM/TO	TURNING PROPORTIONS		
		ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	1.000	0.000
		(0.0)	(2.0)	(0.0)
	ARM C	0.288	0.712	0.000
		(3.0)	(1.0)	(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)
16.15-16.30									
ARM A	3.84	23.02	0.167	-	0.0	0.2	2.9	-	0.052
ARM C	10.41	20.34	0.512	-	0.0	1.0	14.9	-	0.099
16.30-16.45									
ARM A	4.58	22.08	0.208	-	0.2	0.3	3.9	-	0.057
ARM C	12.44	20.34	0.611	-	1.0	1.5	22.2	-	0.125
16.45-17.00									
ARM A	5.62	20.83	0.270	-	0.3	0.4	5.4	-	0.066
ARM C	15.23	20.34	0.749	-	1.5	2.8	39.5	-	0.189
17.00-17.15									
ARM A	5.62	20.79	0.270	-	0.4	0.4	5.5	-	0.066
ARM C	15.23	20.34	0.749	-	2.8	2.9	43.2	-	0.195
17.15-17.30									
ARM A	4.58	22.03	0.208	-	0.4	0.3	4.0	-	0.057
ARM C	12.44	20.34	0.611	-	2.9	1.6	25.4	-	0.129
17.30-17.45									
ARM A	3.84	22.97	0.167	-	0.3	0.2	3.1	-	0.052
ARM C	10.41	20.34	0.512	-	1.6	1.1	16.5	-	0.101

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.4
17.15	0.4
17.30	0.3
17.45	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	1.0 *
16.45	1.5 **
17.00	2.8 ***
17.15	2.9 ***
17.30	1.6 **
17.45	1.1 *

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75
I	ARM	I	TOTAL DEMAND		* QUEUEING *		* INCLUSIVE QUEUEING *		I	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I	I
I	A	I	421.2	I 280.8	I 24.8	I 0.06	I 24.8	I 0.06	I	I
I	C	I	1142.4	I 761.6	I 161.6	I 0.14	I 161.6	I 0.14	I	I
I	ALL	I	1563.6	I 1042.4	I 186.4	I 0.12	I 186.4	I 0.12	I	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