_____ 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\
10.Broad St_Gladstone Rd\Gladstone Bridge Roundabout\Broad St_Gladstone Rd.vai"
(drive-on-the-left) at 13:57:34 on Tuesday, 14 July 2009

.FILE PROPERTIES
****

RUN TITLE: Broad St / Gladstone Road
LOCATION:
DATE: 14/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER: 122374
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Gladstone Rd (N)
ARM B - Holton Rd_Loop (E)
ARM C - Gladstone Bridge (S)
ARM D - Broad St (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.80	5.80	0.00	25.40	43.00	30.0	0.652	29.595
ARM B	6.80	6.80	0.00	20.00	42.00	27.0	0.716	34.697
ARM C	6.63 *	6.63	7.60	23.00	43.00	28.0	0.704	33.927
ARM D	6.10	6.10	0.00	40.00	43.00	13.0	0.719	33.375

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

WARNING ARM C - INPUT VALUE OF V (7.40) 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

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

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

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP OF PEAK	AFTER PEAK
	TO RISE	IS REACHED	FALLING	PEAK		
ARM A	15.00	45.00	75.00	7.99	11.98	7.99
ARM B	15.00	45.00	75.00	10.39	15.58	10.39
ARM C	15.00	45.00	75.00	9.82	14.74	9.82
ARM D	15.00	45.00	75.00	8.26	12.39	8.26

DEMAND SET TITLE: PM 2020 With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.152	0.679	0.169
		0.0	97.0	434.0	108.0
		(0.0)	(0.0)	(7.0)	(2.0)
	ARM B	0.238	0.000	0.339	0.422
		198.0	0.0	282.0	351.0
		(1.0)	(0.0)	(5.0)	(2.0)
	ARM C	0.559	0.112	0.000	0.330
		439.0	88.0	0.0	259.0
		(2.0)	(12.0)	(0.0)	(1.0)
	ARM D	0.351	0.300	0.349	0.000
		232.0	198.0	231.0	0.0
		(4.0)	(5.0)	(3.0)	(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	8.02	23.94	0.335	- -	0.0	0.5	7.3	-	0.063
ARM B	10.43	26.69	0.391	- -	0.0	0.6	9.3	-	0.061
ARM C	9.86	27.29	0.361	- -	0.0	0.6	8.2	-	0.057
ARM D	8.29	25.66	0.323	- -	0.0	0.5	7.0	-	0.057
16.30-16.45									
ARM A	9.57	23.11	0.414	- -	0.5	0.7	10.3	-	0.074
ARM B	12.45	25.30	0.492	- -	0.6	1.0	14.0	-	0.078
ARM C	11.78	26.16	0.450	- -	0.6	0.8	11.9	-	0.069
ARM D	9.90	24.39	0.406	- -	0.5	0.7	10.0	-	0.069
16.45-17.00									
ARM A	11.73	21.98	0.534	- -	0.7	1.1	16.4	-	0.097
ARM B	15.25	23.40	0.652	- -	1.0	1.8	26.1	-	0.121
ARM C	14.42	24.64	0.585	- -	0.8	1.4	20.1	-	0.097
ARM D	12.13	22.67	0.535	- -	0.7	1.1	16.5	-	0.094
17.00-17.15									
ARM A	11.73	21.96	0.534	- -	1.1	1.1	17.0	-	0.098
ARM B	15.25	23.38	0.652	- -	1.8	1.9	27.7	-	0.123
ARM C	14.42	24.61	0.586	- -	1.4	1.4	21.0	-	0.098
ARM D	12.13	22.64	0.536	- -	1.1	1.1	17.1	-	0.095
17.15-17.30									
ARM A	9.57	23.08	0.415	- -	1.1	0.7	11.0	-	0.074
ARM B	12.45	25.26	0.493	- -	1.9	1.0	15.2	-	0.079
ARM C	11.78	26.12	0.451	- -	1.4	0.8	12.8	-	0.070
ARM D	9.90	24.35	0.407	- -	1.1	0.7	10.6	-	0.070
17.30-17.45									
ARM A	8.02	23.91	0.335	- -	0.7	0.5	7.8	-	0.063
ARM B	10.43	26.65	0.391	- -	1.0	0.6	9.9	-	0.062
ARM C	9.86	27.25	0.362	- -	0.8	0.6	8.7	-	0.058
ARM D	8.29	25.62	0.324	- -	0.7	0.5	7.4	-	0.058

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

16.30	0.5	*
16.45	0.7	*
17.00	1.1	*
17.15	1.1	*
17.30	0.7	*
17.45	0.5	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	1.0	*
17.00	1.8	**
17.15	1.9	**
17.30	1.0	*
17.45	0.6	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	0.8	*
17.00	1.4	*
17.15	1.4	*
17.30	0.8	*
17.45	0.6	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.7	*
17.00	1.1	*
17.15	1.1	*
17.30	0.7	*
17.45	0.5	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	879.5	586.4	69.8	0.08	69.8	0.08
B	1143.8	762.5	102.2	0.09	102.2	0.09
C	1081.9	721.2	82.7	0.08	82.7	0.08
D	909.8	606.5	68.5	0.08	68.5	0.08
ALL	4015.0	2676.7	323.2	0.08	323.2	0.08

* 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