



PM 2020 with development and tourism.vao

ARCADY 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 13:58:05 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

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	5.80	I	5.80	I	0.00	I	25.40	I	43.00	I	30.0	I	0.652	I	29.595	I
I	ARM B	I	6.80	I	6.80	I	0.00	I	20.00	I	42.00	I	27.0	I	0.716	I	34.697	I
I	ARM C	I	6.63 *	I	6.63	I	7.60	I	23.00	I	43.00	I	28.0	I	0.704	I	33.927	I
I	ARM D	I	6.10	I	6.10	I	0.00	I	40.00	I	43.00	I	13.0	I	0.719	I	33.375	I

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 (6.63) 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
I	D	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		
I	I	I	FLOW STARTS	I	I	I	BEFORE	I	AT TOP	I	AFTER		
I	I	I	I	I	I	I	I	I	I	I	I		
I	I	I	I	I	I	I	I	I	I	I	I		
I	I	I	I	I	I	I	I	I	I	I	I		
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.99	I	11.98	I	7.99
I	ARM B	I	15.00	I	45.00	I	75.00	I	10.39	I	15.58	I	10.39
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.82	I	14.74	I	9.82

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 I ARM D I 15.00 I 45.00 I 75.00 I 8.26 I 12.39 I 8.26 I

DEMAND SET TITLE: PM 2020 with Development + Tourism

T33

TIME	FROM/TO	TURNING PROPORTIONS			
		ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000	0.152	0.679	0.169
		(0.0)	(0.0)	(7.0)	(2.0)
		198.0	0.0	282.0	351.0
		(1.0)	(0.0)	(5.0)	(2.0)
ARM B	ARM B	0.238	0.000	0.339	0.422
		(0.0)	(0.0)	(0.0)	(0.0)
		439.0	88.0	0.0	259.0
		(2.0)	(12.0)	(0.0)	(1.0)
ARM C	ARM C	0.559	0.112	0.000	0.330
		(0.0)	(0.0)	(0.0)	(0.0)
		232.0	198.0	231.0	0.0
		(4.0)	(5.0)	(3.0)	(0.0)
ARM D	ARM D	0.351	0.300	0.349	0.000
		(0.0)	(0.0)	(0.0)	(0.0)
		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 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				
I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		I				
I		I		I	* DELAY *	I	* DELAY *	I		I				
I		I	(VEH)	I	(MIN)	I	(MIN)	I	(MIN/VEH)	I				
I		I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I		I				
I	A	I	879.5	I	586.4	I	69.8	I	0.08	I	69.8	I	0.08	I
I	B	I	1143.8	I	762.5	I	102.2	I	0.09	I	102.2	I	0.09	I
I	C	I	1081.9	I	721.2	I	82.7	I	0.08	I	82.7	I	0.08	I
I	D	I	909.8	I	606.5	I	68.5	I	0.08	I	68.5	I	0.08	I
I	ALL	I	4015.0	I	2676.7	I	323.2	I	0.08	I	323.2	I	0.08	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