

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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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

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Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
21.Gladstone_Bridge_Ffordd y Mileniwm\with Improvements\Gladstone Bridge_Ffordd Mileniwm.vai"
(drive-on-the-left) at 17:28:38 on Thursday, 16 July 2009

.FILE PROPERTIES

RUN TITLE: Gladstone Bridge_Ffordd Y Mileniwm
LOCATION:
DATE: 16/07/09
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA

ARM A - Ffordd Y Mileniwm (E)
ARM B - Ffordd Y Mileniwm (W)
ARM C - Gladstone Bridge

.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	3.70	I	8.66	I	30.00	I	30.00	I	45.00	I	11.0	I	0.765	I	37.950	I
I	ARM	B	I	3.64	I	7.50	I	44.00	I	20.00	I	45.00	I	40.0	I	0.666	I	32.436	I
I	ARM	C	I	3.58	I	6.57	I	19.60	I	20.00	I	45.00	I	8.0	I	0.674	I	30.380	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 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 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	20.66	I	30.99	I	20.66
I	ARM	B	I	15.00	I	45.00	I	75.00	I	9.96	I	14.94	I	9.96
I	ARM	C	I	15.00	I	45.00	I	75.00	I	12.06	I	18.09	I	12.06

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	0.592	0.408
		(0.0)	(0.0)	(4.0)
	ARM B	0.724	0.000	0.276
		(1.0)	(0.0)	(0.0)
	ARM C	0.743	0.257	0.000
		(6.0)	(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)
16.15-16.30									
ARM A	20.74	35.01	0.592	-	0.0	1.4	20.8	-	0.069
ARM B	10.00	26.41	0.379	-	0.0	0.6	8.9	-	0.061
ARM C	12.11	24.38	0.497	-	0.0	1.0	14.1	-	0.081

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)
16.30-16.45									
ARM A	24.77	34.55	0.717	-	1.4	2.5	35.3	-	0.101
ARM B	11.94	25.27	0.473	-	0.6	0.9	13.0	-	0.075
ARM C	14.46	23.46	0.616	-	1.0	1.6	22.7	-	0.110

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)
16.45-17.00									
ARM A	30.33	33.94	0.894	-	2.5	7.3	93.7	-	0.238
ARM B	14.63	23.78	0.615	-	0.9	1.6	22.5	-	0.108
ARM C	17.71	22.20	0.798	-	1.6	3.7	50.0	-	0.210

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)
17.00-17.15									
ARM A	30.33	33.92	0.894	-	7.3	7.8	114.2	-	0.270
ARM B	14.63	23.70	0.617	-	1.6	1.6	23.8	-	0.110
ARM C	17.71	22.18	0.798	-	3.7	3.8	56.5	-	0.222

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	24.77	34.52	0.718	-	7.8	2.6	43.1	-	0.110
ARM B	11.94	25.15	0.475	-	1.6	0.9	14.1	-	0.076
ARM C	14.46	23.43	0.617	-	3.8	1.6	26.2	-	0.115

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	20.74	34.99	0.593	-	2.6	1.5	22.9	-	0.071
ARM B	10.00	26.36	0.379	-	0.9	0.6	9.4	-	0.061
ARM C	12.11	24.35	0.497	-	1.6	1.0	15.5	-	0.082

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	1.4 *
16.45	2.5 **
17.00	7.3 *****
17.15	7.8 *****
17.30	2.6 ***
17.45	1.5 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES
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