_____ 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\
19.Y Rhodfa_Fford y Mileniwm\With Improvements\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 17:03:13 on Thursday, 16 July 2009

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm / Morrisons Retail
LOCATION:
DATE: 16/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	8.60	11.70	30.00	45.00	25.5	0.666	30.787
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

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

.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(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

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	0.95	1.42	0.95
ARM B	15.00	45.00	75.00	9.25	13.88	9.25
ARM C	15.00	45.00	75.00	0.64	0.96	0.64
ARM D	15.00	45.00	75.00	12.52	18.79	12.52

DEMAND SET TITLE: AM 2020 With Development

T33

TURNING PROPORTIONS

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.382	0.000	0.618
		0.0	29.0	0.0	47.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.035	0.035	0.028	0.901
		26.0	26.0	21.0	667.0
		(0.0)	(0.0)	(6.0)	(4.0)
	ARM C	0.020	0.569	0.000	0.412
		1.0	29.0	0.0	21.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.061	0.934	0.005	0.000
		61.0	936.0	5.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)

TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

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	0.95	13.73	0.069	- - -	0.0	0.1	1.1	-	0.078
ARM B	9.29	29.25	0.317	- - -	0.0	0.5	6.8	-	0.050
ARM C	0.64	15.82	0.040	- - -	0.0	0.0	0.6	-	0.066
ARM D	12.57	22.47	0.560	- - -	0.0	1.3	17.9	-	0.099
08.30-08.45									
ARM A	1.14	12.36	0.092	- - -	0.1	0.1	1.5	-	0.089
ARM B	11.09	29.17	0.380	- - -	0.5	0.6	9.0	-	0.055
ARM C	0.76	14.74	0.052	- - -	0.0	0.1	0.8	-	0.072
ARM D	15.01	22.35	0.672	- - -	1.3	2.0	28.4	-	0.135
08.45-09.00									
ARM A	1.39	10.54	0.132	- - -	0.1	0.2	2.2	-	0.109
ARM B	13.58	29.06	0.467	- - -	0.6	0.9	12.8	-	0.064
ARM C	0.94	13.27	0.071	- - -	0.1	0.1	1.1	-	0.081
ARM D	18.39	22.20	0.828	- - -	2.0	4.4	59.1	-	0.242
09.00-09.15									
ARM A	1.39	10.46	0.133	- - -	0.2	0.2	2.3	-	0.110
ARM B	13.58	29.05	0.467	- - -	0.9	0.9	13.1	-	0.065
ARM C	0.94	13.25	0.071	- - -	0.1	0.1	1.1	-	0.081
ARM D	18.39	22.20	0.828	- - -	4.4	4.6	68.0	-	0.259
09.15-09.30									
ARM A	1.14	12.24	0.093	- - -	0.2	0.1	1.6	-	0.090
ARM B	11.09	29.16	0.380	- - -	0.9	0.6	9.4	-	0.055
ARM C	0.76	14.72	0.052	- - -	0.1	0.1	0.8	-	0.072
ARM D	15.01	22.35	0.672	- - -	4.6	2.1	33.8	-	0.143
09.30-09.45									
ARM A	0.95	13.66	0.070	- - -	0.1	0.1	1.2	-	0.079
ARM B	9.29	29.25	0.317	- - -	0.6	0.5	7.1	-	0.050
ARM C	0.64	15.79	0.041	- - -	0.1	0.0	0.6	-	0.066
ARM D	12.57	22.46	0.560	- - -	2.1	1.3	20.1	-	0.102

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.2
09.15	0.2
09.30	0.1
09.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	
08.45	0.6	*
09.00	0.9	*
09.15	0.9	*
09.30	0.6	*
09.45	0.5	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.3	*
08.45	2.0	**
09.00	4.4	****
09.15	4.6	*****
09.30	2.1	**
09.45	1.3	*

.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	104.6	69.7	9.8	0.09	9.8	0.09
B	1018.6	679.0	58.2	0.06	58.2	0.06
C	70.2	46.8	5.2	0.07	5.2	0.07
D	1379.2	919.5	227.3	0.16	227.3	0.16
ALL	2572.5	1715.0	300.5	0.12	300.5	0.12

* 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