

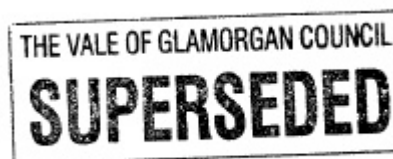
ARCADY 6

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\
 19.Y Rhodfa_Fford y Mileniwm\With Improvements\Ffordd y Mileniwm_Y Rhodfa.vai"
 (drive-on-the-left) at 17:11:13 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

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	2.96	I	6.04	I	5.60	I	34.50	I	45.00	I	34.5	I	0.540	I	20.685	I
I	ARM B	I	3.84	I	8.60	I	11.70	I	30.00	I	45.00	I	25.5	I	0.666	I	30.787	I
I	ARM C	I	3.39	I	5.62	I	3.40	I	26.90	I	45.00	I	18.7	I	0.567	I	21.828	I
I	ARM D	I	3.76	I	6.51	I	3.70	I	23.90	I	45.00	I	22.2	I	0.586	I	23.908	I

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

.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 FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	RATE OF FLOW (VEH/MIN) BEFORE	I	AT TOP	I	AFTER
I	ARM A	I	15.00	I	45.00	I	75.00	I	0.86	I	1.29	I	0.86
I	ARM B	I	15.00	I	45.00	I	75.00	I	18.13	I	27.19	I	18.13
I	ARM C	I	15.00	I	45.00	I	75.00	I	0.63	I	0.94	I	0.63
I	ARM D	I	15.00	I	45.00	I	75.00	I	12.74	I	19.11	I	12.74

.DEMAND SET TITLE: PM 2020 with Development + Tourism

----- T33

I	ARM	I	TURNING PROPORTIONS	I
---	-----	---	---------------------	---

PM 2020 with development + tourism.vao

TIME	TURNING COUNTS (PERCENTAGE OF H.V.S)				
	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000	0.493	0.000	0.507
		0.0	34.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.030	0.023	0.028	0.919
		43.0	33.0	41.0	1333.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.340	0.000	0.660
		0.0	17.0	0.0	33.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.046	0.931	0.023	0.000
		47.0	949.0	23.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

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)
16.15-16.30									
ARM A	0.87	13.68	0.063	--	0.0	0.1	1.0	-	0.078
ARM B	18.19	30.03	0.606	--	0.0	1.5	21.8	-	0.083
ARM C	0.63	11.52	0.054	--	0.0	0.1	0.8	-	0.092
ARM D	12.79	22.80	0.561	--	0.0	1.3	18.0	-	0.098

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	1.03	12.30	0.084	--	0.1	0.1	1.3	-	0.089
ARM B	21.73	29.93	0.726	--	1.5	2.6	36.5	-	0.120
ARM C	0.75	9.49	0.079	--	0.1	0.1	1.2	-	0.114
ARM D	15.27	22.67	0.673	--	1.3	2.0	28.7	-	0.133

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	1.27	10.47	0.121	--	0.1	0.1	2.0	-	0.109
ARM B	26.61	29.81	0.893	--	2.6	7.1	91.2	-	0.266
ARM C	0.92	6.84	0.134	--	0.1	0.2	2.2	-	0.169
ARM D	18.70	22.50	0.831	--	2.0	4.5	60.0	-	0.242

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	1.27	10.38	0.122	--	0.1	0.1	2.1	-	0.110
ARM B	26.61	29.80	0.893	--	7.1	7.6	111.6	-	0.302
ARM C	0.92	6.69	0.137	--	0.2	0.2	2.3	-	0.173
ARM D	18.70	22.49	0.831	--	4.5	4.7	69.3	-	0.260

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	1.03	12.17	0.085	--	0.1	0.1	1.4	-	0.090
ARM B	21.73	29.93	0.726	--	7.6	2.7	45.4	-	0.132
ARM C	0.75	9.27	0.081	--	0.2	0.1	1.4	-	0.118
ARM D	15.27	22.66	0.674	--	4.7	2.1	34.2	-	0.142

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	0.87	13.61	0.064	--	0.1	0.1	1.0	-	0.079
ARM B	18.19	30.02	0.606	--	2.7	1.6	24.3	-	0.086
ARM C	0.63	11.42	0.055	--	0.1	0.1	0.9	-	0.093
ARM D	12.79	22.80	0.561	--	2.1	1.3	20.2	-	0.101

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.5	**
16.45	2.6	***
17.00	7.1	*****
17.15	7.6	*****
17.30	2.7	***
17.45	1.6	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.1
17.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.3	*
16.45	2.0	**
17.00	4.5	*****
17.15	4.7	*****
17.30	2.1	**
17.45	1.3	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75	
I	ARM	I	TOTAL DEMAND		I	* QUEUEING * * DELAY *		I	* INCLUSIVE QUEUEING * * DELAY *		I
I	I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	A	I	95.0	I 63.3	I	8.9	I 0.09	I	8.9	I 0.09	I
I	B	I	1995.8	I 1330.5	I	330.8	I 0.17	I	330.8	I 0.17	I
I	C	I	68.8	I 45.9	I	8.9	I 0.13	I	8.9	I 0.13	I
I	D	I	1402.6	I 935.1	I	230.4	I 0.16	I	230.5	I 0.16	I
I	ALL	I	3562.2	I 2374.8	I	579.0	I 0.16	I	579.1	I 0.16	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