TRL TRL VIEWER 2.0 AD p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Saturday Inter-peak Base

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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n with file:-
:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Saturday Inter-peak Base.vai"
(drive-on-the-left) at 12:13:20 on Wednesday, 11 January 2012

UNDABOUT CAPACITY AND DELAY
****

N TITLE
****
2017 Saturday Inter-peak Base

NPUT DATA
****
ARM A - Midland Road (West)
ARM B - The Lane
M C - Midland Road (East)

MINI-ROUNDABOUT GEOMETRIC DATA

GHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

ARM	V (m)	E (m)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.25	4.10	1.00	3.25	11.30	7.40	0.00	0.529	13.616
ARM B	3.65	4.10	0.50	3.65	10.70	8.00	0.00	0.544	13.158
ARM C	3.25	4.00	0.00	3.25	13.40	13.80	0.00	0.580	15.680

V = approach half-width
- entry width
Lm = effective flare length
Vm = minimum approach half-width
A = distance between arms
K = entry corner kerb line
G = gradient over 50m

RAFFIC DEMAND DATA

IME PERIOD BEGINS 11.45 AND ENDS 13.15

ENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK FLOW IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.00	6.00	4.00
ARM B	15.00	45.00	75.00	2.29	3.43	2.29
ARM C	15.00	45.00	75.00	4.09	6.13	4.09

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
11.45 - 13.15	ARM A	0.000	0.356	0.644
		0.0	114.0	206.0
		(10.0)	(10.0)	(10.0)
	ARM B	0.497	0.000	0.503
		91.0	0.0	92.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.765	0.235	0.000
		250.0	77.0	0.0
		(10.0)	(10.0)	(10.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
11.45-12.00							
ARM A	4.00	11.87	0.337		0.0	0.5	7.2
ARM B	2.29	10.57	0.216		0.0	0.3	4.0
ARM C	4.09	13.60	0.301		0.0	0.4	6.2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.00-12.15							
ARM A	4.78	11.77	0.406		0.5	0.7	9.8
ARM B	2.73	10.29	0.265		0.3	0.4	5.2
ARM C	4.88	13.47	0.362		0.4	0.6	8.2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.15-12.30							
ARM A	5.85	11.64	0.503		0.7	1.0	14.2
ARM B	3.35	9.92	0.337		0.4	0.5	7.3
ARM C	5.98	13.29	0.450		0.6	0.8	11.7

TRL TRL VIEWER 2.0 AD p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Saturday Inter-peak Base

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.30-12.45							
ARM A	5.85	11.63	0.503		1.0	1.0	14.9
ARM B	3.35	9.91	0.337		0.5	0.5	7.6
ARM C	5.98	13.29	0.450		0.8	0.8	12.1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.45-13.00							
ARM A	4.78	11.77	0.406		1.0	0.7	10.8
ARM B	2.73	10.28	0.266		0.5	0.4	5.7
ARM C	4.88	13.46	0.363		0.8	0.6	8.9

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
13.00-13.15							
ARM A	4.00	11.87	0.337		0.7	0.5	8.0
ARM B	2.29	10.56	0.217		0.4	0.3	4.3
ARM C	4.09	13.59	0.301		0.6	0.4	6.7

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.5	*
12.15	0.7	*
12.30	1.0	*
12.45	1.0	*
13.00	0.7	*
13.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.3	
12.15	0.4	
12.30	0.5	*
12.45	0.5	*
13.00	0.4	
13.15	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.4	
12.15	0.6	*
12.30	0.8	*
12.45	0.8	*
13.00	0.6	*
13.15	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	438.8	292.5	64.9	0.15	64.9	0.15
B	250.9	167.3	34.0	0.14	34.0	0.14
C	448.4	298.9	53.7	0.12	53.7	0.12
ALL	1138.1	758.7	152.6	0.13	152.6	0.13

* 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

****** ARCADY 5 run completed.

========== end of file ==========

[Printed at 12:13:30 PM on 1/11/2012]

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
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Run with file:-
"p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Weekday AM Peak with Development .vai"
(drive-on-the-left) at 12:52:56 on Thursday, 27 September 2012

ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
2017 Weekday AM Peak with Development

INPUT DATA
****
ARM A - Midland Road (West)
ARM B - The Lane
ARM C - Midland Road (East)

MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

ARM	V (m)	E (m)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.25	4.10	1.00	3.25	11.30	7.40	0.00	0.529	13.616
ARM B	3.65	4.10	0.50	3.65	10.70	8.00	0.00	0.544	13.158
ARM C	3.25	4.00	0.00	3.25	13.40	13.80	0.00	0.580	15.680

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K = entry corner kerb line
G = gradient over 50m

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	2.19	3.28	2.19
ARM B	15.00	45.00	75.00	2.90	4.35	2.90
ARM C	15.00	45.00	75.00	3.59	5.38	3.59

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.45 - 09.15	ARM A	0.000	0.246	0.754
		0.0	43.0	132.0
		(10.0)	(10.0)	(10.0)
	ARM B	0.685	0.000	0.315
		159.0	0.0	73.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.913	0.087	0.000
		262.0	25.0	0.0
		(10.0)	(10.0)	(10.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
07.45-08.00							
ARM A	2.19	12.21	0.179		0.0	0.2	3.1
ARM B	2.90	11.07	0.262		0.0	0.4	5.1
ARM C	3.59	13.11	0.274		0.0	0.4	5.4

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
08.00-08.15							
ARM A	2.61	12.18	0.214		0.2	0.3	4.0
ARM B	3.46	10.89	0.318		0.4	0.5	6.7
ARM C	4.28	12.88	0.333		0.4	0.5	7.2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
08.15-08.30							
ARM A	3.20	12.14	0.264		0.3	0.4	5.2
ARM B	4.24	10.65	0.398		0.5	0.7	9.4
ARM C	5.25	12.57	0.417		0.5	0.7	10.2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
08.30-08.45							
ARM A	3.20	12.14	0.264		0.4	0.4	5.3
ARM B	4.24	10.65	0.398		0.7	0.7	9.8
ARM C	5.25	12.57	0.417		0.7	0.7	10.6

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
08.45-09.00							
ARM A	2.61	12.18	0.214		0.4	0.3	4.2
ARM B	3.46	10.89	0.318		0.7	0.5	7.3
ARM C	4.28	12.87	0.333		0.7	0.5	7.8

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
09.00-09.15							
ARM A	2.19	12.21	0.179		0.3	0.2	3.4
ARM B	2.90	11.06	0.262		0.5	0.4	5.5
ARM C	3.59	13.10	0.274		0.5	0.4	5.9

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.2	
08.15	0.3	
08.30	0.4	
08.45	0.4	
09.00	0.3	
09.15	0.2	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.4	
08.15	0.5	
08.30	0.7	*
08.45	0.7	*
09.00	0.5	
09.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.4	
08.15	0.5	
08.30	0.7	*
08.45	0.7	*
09.00	0.5	*
09.15	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	240.0	160.0	25.2	0.11	25.2	0.11
B	318.1	212.1	43.9	0.14	43.9	0.14
C	393.5	262.4	47.1	0.12	47.1	0.12
ALL	951.6	634.4	116.2	0.12	116.2	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

****** ARCADY 5 run completed.

========== end of file ==========

[Printed at 12:53:02 on 27/09/2012]

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

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Run with file:-
"p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Weekday PM Peak with Development .vai"
(drive-on-the-left) at 14:40:41 on Wednesday, 26 September 2012

ROUNDABOUT CAPACITY AND DELAY
****

RUN TITLE
****
2017 Weekday PM Peak with Development

INPUT DATA
****
ARM A - Midland Road (West)
ARM B - The Lane
ARM C - Midland Road (East)

MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

ARM	V (m)	E (m)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.25	4.10	1.00	3.25	11.30	7.40	0.00	0.529	13.616
ARM B	3.65	4.10	0.50	3.65	10.70	8.00	0.00	0.544	13.158
ARM C	3.25	4.00	0.00	3.25	13.40	13.80	0.00	0.580	15.680

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K = entry corner kerb line
G = gradient over 50m

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	3.99	5.98	3.99
ARM B	15.00	45.00	75.00	5.56	8.34	5.56
ARM C	15.00	45.00	75.00	4.45	6.67	4.45

TIME	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000	0.486	0.514
		0.0	155.0	164.0
		(10.0)	(10.0)	(10.0)
	ARM B	0.580	0.000	0.420
		258.0	0.0	187.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.756	0.244	0.000
		269.0	87.0	0.0
		(10.0)	(10.0)	(10.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00							
ARM A	3.99	11.81	0.338		0.0	0.5	7.2
ARM B	5.56	10.86	0.512		0.0	1.0	14.4
ARM C	4.45	12.41	0.359		0.0	0.6	7.9

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
17.00-17.15							
ARM A	4.76	11.69	0.407		0.5	0.7	9.8
ARM B	6.64	10.63	0.625		1.0	1.6	22.5
ARM C	5.31	12.03	0.442		0.6	0.8	11.3

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
17.15-17.30							
ARM A	5.83	11.54	0.505		0.7	1.0	14.3
ARM B	8.13	10.34	0.787		1.6	3.3	43.4
ARM C	6.51	11.56	0.563		0.8	1.3	17.8

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
17.30-17.45							
ARM A	5.83	11.54	0.505		1.0	1.0	15.1
ARM B	8.13	10.33	0.787		3.3	3.5	51.0
ARM C	6.51	11.52	0.565		1.3	1.3	19.0

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
17.45-18.00							
ARM A	4.76	11.69	0.407		1.0	0.7	10.9
ARM B	6.64	10.63	0.625		3.5	1.7	28.4
ARM C	5.31	11.98	0.443		1.3	0.8	12.7

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
18.00-18.15							
ARM A	3.99	11.80	0.338		0.7	0.5	8.0
ARM B	5.56	10.84	0.513		1.7	1.1	17.1
ARM C	4.45	12.37	0.360		0.8	0.6	8.8

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.7	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	3.3	***
17.45	3.5	***
18.00	1.7	**
18.15	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.8	*
17.30	1.3	*
17.45	1.3	*
18.00	0.8	*
18.15	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	437.4	291.6	65.4	0.15	65.4	0.15
B	610.2	406.8	176.7	0.29	176.7	0.29
C	488.2	325.4	77.5	0.16	77.5	0.16
ALL	1535.8	1023.8	319.5	0.21	319.6	0.21

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END OF JOB

****** ARCADY 5 run completed.

========== end of file ==========

[Printed at 14:40:49 on 26/09/2012]

TRL TRL VIEWER 2.0 AE p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Saturday Peak with D

TRL LIMITED

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CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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Run with file:-
"p:\data\W50---\W50709 - Royston Development, Barnsley\ARCADY\2017 Saturday Peak with Development .vai"
(drive-on-the-left) at 14:42:46 on Wednesday, 26 September 2012

ROUNDABOUT CAPACITY AND DELAY

****

RUN TITLE

2017 Saturday Peak with Development

INPUT DATA

ARM A - Midland Road (West)
ARM B - The Lane
ARM C - Midland Road (East)

MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

ARM	V (m)	E (m)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.25	4.10	1.00	3.25	11.30	7.40	0.00	0.529	13.616
ARM B	3.65	4.10	0.50	3.65	10.70	8.00	0.00	0.544	13.158
ARM C	3.25	4.00	0.00	3.25	13.40	13.80	0.00	0.580	15.680

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K = entry corner kerb line
G = gradient over 50m

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.19	4.78	3.19
ARM B	15.00	45.00	75.00	5.55	8.33	5.55
ARM C	15.00	45.00	75.00	4.76	7.14	4.76

TIME	FROM/TO	ARM A	ARM B	ARM C
11.45 - 13.15				
	ARM A	0.000	0.412	0.588
		0.0	105.0	150.0
		(10.0)	(10.0)	(10.0)
	ARM B	0.588	0.000	0.412
		261.0	0.0	183.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.808	0.192	0.000
		308.0	73.0	0.0
		(10.0)	(10.0)	(10.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
11.45-12.00							
ARM A	3.19	11.90	0.268		0.0	0.4	5.2
ARM B	5.55	10.95	0.507		0.0	1.0	14.1
ARM C	4.76	12.39	0.385		0.0	0.6	8.8

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.00-12.15							
ARM A	3.81	11.80	0.322		0.4	0.5	6.9
ARM B	6.63	10.75	0.617		1.0	1.5	21.8
ARM C	5.69	12.01	0.474		0.6	0.9	12.7

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.15-12.30							
ARM A	4.66	11.68	0.399		0.5	0.7	9.5
ARM B	8.12	10.47	0.775		1.5	3.1	41.2
ARM C	6.96	11.52	0.604		0.9	1.5	20.8

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.30-12.45							
ARM A	4.66	11.67	0.399		0.7	0.7	9.9
ARM B	8.12	10.47	0.775		3.1	3.3	47.9
ARM C	6.96	11.49	0.606		1.5	1.5	22.4

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
12.45-13.00							
ARM A	3.81	11.80	0.323		0.7	0.5	7.4
ARM B	6.63	10.74	0.617		3.3	1.7	27.2
ARM C	5.69	11.96	0.476		1.5	0.9	14.5

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	CROSSING USE PER MIN	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)
13.00-13.15							
ARM A	3.19	11.89	0.268		0.5	0.4	5.7
ARM B	5.55	10.94	0.507		1.7	1.1	16.7
ARM C	4.76	12.35	0.386		0.9	0.6	9.9

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.4	
12.15	0.5	
12.30	0.7	*
12.45	0.7	*
13.00	0.5	
13.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	1.0	*
12.15	1.5	**
12.30	3.1	***
12.45	3.3	***
13.00	1.7	**
13.15	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	0.6	*
12.15	0.9	*
12.30	1.5	*
12.45	1.5	**
13.00	0.9	*
13.15	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
A	349.7	233.1	44.6	0.13	44.6	0.13
B	608.8	405.9	168.9	0.28	168.9	0.28
C	522.4	348.3	89.3	0.17	89.3	0.17
ALL	1480.9	987.3	302.8	0.20	302.8	0.20

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END OF JOB

****** ARCADY 5 run completed.

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