User	WSP - Basingstoke	Project				Page 4
Location		File	Eastern Site Access 260906.LSG	SCN		Chkd	
Title				Controller	Generic	Appvd	

Stages

Stage Data	
Stage	Phases In Stage
1	BDJ
2	ABH
3	AB
4	CGI
5	C
6	D
7	D

User	WSP - Basingstoke	Project				Page 5
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Links

Link Data							
Ref Num	Link	Type	Full Phase	Arrw Phase	Opposing Arm/Link	R Turn Storage	Max Turn
1/1	A41 North Ahead	U	B				
1/2	A41 North Right	U	A				
2/1	A41 South Ahead Left	U	D				
3/1	Site Access Left Right	U	C				

User	WSP - Basingstoke	Project				Page 6
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Lanes

Lane Data								
Ref Num	Lane	Length (pcu)	Gradient (%)	Width (m)	Propn Turn(%)	Radius (m)	User Satn	RR67 Satn
1/1	A41 North Ahead	Inf	0.00	3.65	0	Inf	1800	1980
1/2	A41 North Ahead	Inf	0.00	3.65	0	Inf	1800	2120
1/3	A41 North Right	10	0.00	3.65	100	25.00	1800	2000
2/1	A41 South Left	10	0.00	3.65	100	15.00	1800	1800
2/2	A41 South Ahead	Inf	0.00	3.65	0	Inf	1800	2120
2/3	A41 South Ahead	Inf	0.00	3.65	0	Inf	1800	2120
3/1	Site Access Left	Inf	0.00	3.25	100	15.00	1800	1764
3/2	Site Access Right	Inf	0.00	3.65	100	25.00	1800	2000

User	WSP - Basingstoke	Project				Page 7
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Traffic Flows

Traffic Flows							
Grp Num	Time Start	Time End	Title	Link Number			
				1/1	1/2	2/1	3/1
1	08:00	09:00	2014 AM With Dev Excl Browne	1476	153	1817	296
2	17:00	18:00	2014 PM With Dev Excl Browne	1301	131	1925	283

User	WSP - Basingstoke	Project				Page 8
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Parameters Selected

Parameters Selected	
Flow Group	2014 AM With Dev Excl Browne
Flow Group Period	08:00 to 09:00
Phase Minimum Type	Street
CycleTime	90
Flow Factor	1.00
Sat Flows Used	RR67

Stage Results

Stage Timings						
Stage Sequence	1	2	3	4	5	6
Stage Duration	40	5	5	5	3	4
Stage Change Point	0	42	56	61	78	81

User	WSP - Basingstoke	Project				Page 9
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Link Results

Link Results												
Link Ref	Link Name	Link Type	Full Phs	Arw Phs	Tot Grn (s)	Dem Flow pcu	Max Satn pcu/h	Cap pcu	Deg Sat %	Tot Del s/pcu	TDel pcuh	Que' pcu
1/1	A41 North Ahead	U	B		59	1476	4100	2733	54.0	9.0	3.7	12.7
1/2	A41 North Right	U	A		14	153	2000	333	45.9	39.1	1.7	3.3
2/1	A41 South Ahead Left	U	D		46	1817	6040	2614	69.5	18.2	9.2	22.2
3/1	Site Access Left Right	U	C		15	296	3764	669	44.2	35.9	2.9	6.2
Cycle Time 90 s				PRC 29.5 %				Total Delay 17.5 PCUh				

User	WSP - Basingstoke	Project				Page 10
Location		File	Eastern Site Access 260906.LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Parameters Selected

Parameters Selected	
Flow Group	2014 PM With Dev Excl Browne
Flow Group Period	17:00 to 18:00
Phase Minimum Type	Street
CycleTime	90
Flow Factor	1.00
Sat Flows Used	RR67

Stage Results

Stage Timings						
Stage Sequence	1	2	3	4	5	6
Stage Duration	40	5	5	5	3	4
Stage Change Point	0	42	56	61	78	81

User	WSP - Basingstoke	Project				Page 11
Location		File	Eastern Site Access 260906.LSG	SCN		Chkd	
Title				Controller	Generic	Appvd	

Link Results

Link Results												
Link Ref	Link Name	Link Type	Full Phs	Arw Phs	Tot Grn (s)	Dem Flow pcu	Max Satn pcu/h	Cap pcu	Deg Sat %	Tot Del s/pcu	TDel pcuh	Que' pcu
1/1	A41 North Ahead	U	B		59	1301	4100	2733	47.6	8.4	3.0	11.2
1/2	A41 North Right	U	A		14	131	2000	333	39.3	37.7	1.4	2.8
2/1	A41 South Ahead Left	U	D		46	1925	6040	2614	73.6	19.2	10.2	23.5
3/1	Site Access Left Right	U	C		15	283	3764	669	42.3	35.6	2.8	5.9
Cycle Time 90 s				PRC 22.2 %				Total Delay 17.4 PCUh				

APPENDIX R

Capacity Analysis – North Eastern Access

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

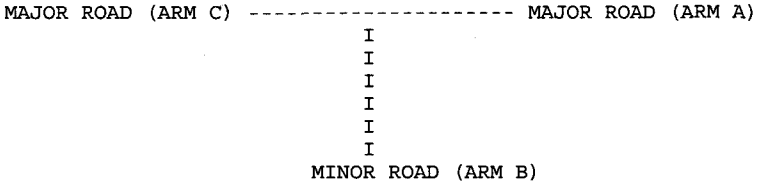
FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\North Eastern Site Access\NE site access-TotTraffic Exc Browne-AM Peak.vpi"
(drive-on-the-left) at 09:11:18 on Wednesday, 27 September 2006

RUN TITLE
****
North Eastern Site Access - 2014 Total traffic Excl Browne AM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS Middleton Stoney Road (E)
ARM B IS North Eastern Site Access
ARM C IS Middleton Stoney Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B	
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.80 M.	
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.	
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	3.90 M.	
- VISIBILITY	(VC-B)	110.0 M.	
- BLOCKS TRAFFIC		YES	
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	90.0 M.	
- VISIBILITY TO RIGHT	(VB-A)	90.0 M.	
- LANE 1 WIDTH	(WB-C)	2.75 M.	
- LANE 2 WIDTH	(WB-A)	0.00 M.	

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
08.00 - 09.00	ARM A	0.000	0.003	0.997
		0.0	1.0	384.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.714	0.000	0.286
		5.0	0.0	2.0
		(0.1)	(0.0)	(0.1)
	ARM C	1.000	0.000	0.000
		738.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
B-AC	0.12	6.47	0.019		0.0	0.0	0.3	
C-AB	0.00	9.87	0.000		0.0	0.0	0.0	
C-A	12.30							
A-B	0.02							
A-C	6.40							

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)
08.15-08.30								
B-AC	0.12	6.47	0.019		0.0	0.0	0.3	
C-AB	0.00	9.87	0.000		0.0	0.0	0.0	
C-A	12.30							
A-B	0.02							
A-C	6.40							

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)
08.30-08.45								
B-AC	0.12	6.47	0.019		0.0	0.0	0.3	
C-AB	0.00	9.87	0.000		0.0	0.0	0.0	
C-A	12.30							
A-B	0.02							
A-C	6.40							

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)
08.45-09.00								
B-AC	0.12	6.47	0.019		0.0	0.0	0.3	
C-AB	0.00	9.87	0.000		0.0	0.0	0.0	
C-A	12.30							
A-B	0.02							
A-C	6.40							

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	7.2	7.2	1.1	0.16	1.1	0.16
C-AB	0.0	0.0	0.0	0.00	0.0	0.00
C-A	738.0	738.0				
A-B	1.0	1.0				
A-C	384.2	384.2				
ALL	1130.4	1130.4	1.1	0.00	1.1	0.00

* 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

****** PICADY 4 run completed.

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

[Printed at 12:27:38 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

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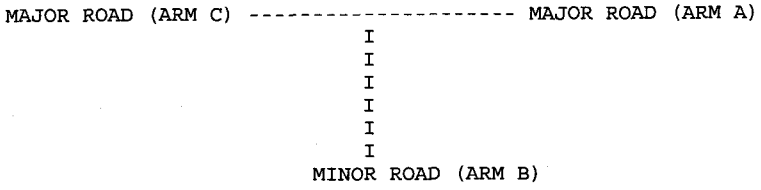
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\North Eastern Site Access\NE site access-TotTraffic Exc Browne-PM Peak.vpi"
(drive-on-the-left) at 09:11:23 on Wednesday, 27 September 2006

RUN TITLE
****
North Eastern Site Access - 2014 Total Traffic Excl Browne PM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS Middleton Stoney Road (E)
ARM B IS North Eastern Site Access
ARM C IS Middleton Stoney Road (W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B	
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.80 M.	
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.	
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	3.90 M.	
- VISIBILITY	(VC-B)	110.0 M.	
- BLOCKS TRAFFIC		YES	
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	90.0 M.	
- VISIBILITY TO RIGHT	(VB-A)	90.0 M.	
- LANE 1 WIDTH	(WB-C)	2.75 M.	
- LANE 2 WIDTH	(WB-A)	0.00 M.	

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.00	ARM A	0.000	0.006	0.994
		0.0	5.0	788.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.667	0.000	0.333
		2.0	0.0	1.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.996	0.004	0.000
		468.0	2.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
B-AC	0.05	5.55	0.009		0.0	0.0	0.1	
C-AB	0.07	14.20	0.005		0.0	0.0	0.1	
C-A	7.76							
A-B	0.08							
A-C	13.14							

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)
17.15-17.30								
B-AC	0.05	5.55	0.009		0.0	0.0	0.1	
C-AB	0.07	14.20	0.005		0.0	0.0	0.1	
C-A	7.76							
A-B	0.08							
A-C	13.14							

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)
17.30-17.45								
B-AC	0.05	5.55	0.009		0.0	0.0	0.1	
C-AB	0.07	14.20	0.005		0.0	0.0	0.1	
C-A	7.76							
A-B	0.08							
A-C	13.14							

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)
17.45-18.00								
B-AC	0.05	5.55	0.009		0.0	0.0	0.1	
C-AB	0.07	14.20	0.005		0.0	0.0	0.1	
C-A	7.76							
A-B	0.08							
A-C	13.14							

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	3.0	3.0	0.5	0.18	0.5	0.18
C-AB	4.0	4.0	0.3	0.07	0.3	0.07
C-A	465.8	465.8				
A-B	5.0	5.0				
A-C	788.2	788.2				
ALL	1266.0	1266.0	0.8	0.00	0.8	0.00

* 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

****** PICADY 4 run completed.

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

[Printed at 12:34:07 on 27/09/2006]

APPENDIX S

Capacity Analysis – Northern Access

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

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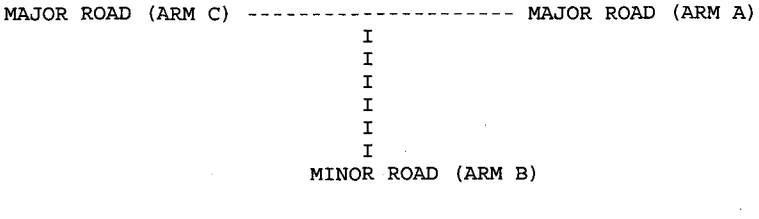
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Northern Site Access\
B4030 jc with100units-TotTraffExc Browne-AM Peak.vpi"
(drive-on-the-left) at 09:11:32 on Wednesday, 27 September 2006

RUN TITLE
****
B4030 jctwith100units- 2014 TotTraf ExcBrowne-AM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS B4030(E)
ARM B IS Site Access
ARM C IS B4030(W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.30 M.
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	2.20 M.
- VISIBILITY	(VC-B)	160.0 M.
- BLOCKS TRAFFIC		YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	160.0 M.
- VISIBILITY TO RIGHT	(VB-A)	160.0 M.
- LANE 1 WIDTH	(WB-C)	3.65 M.
- LANE 2 WIDTH	(WB-A)	0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
08.00 - 09.00				
	ARM A	0.000	0.018	0.982
		0.0	7.0	379.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.906	0.000	0.094
		29.0	0.0	3.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.999	0.001	0.000
		710.0	1.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
B-AC	0.53	7.21	0.074		0.0	0.1	1.1	
C-AB	0.04	16.80	0.002		0.0	0.0	0.0	
C-A	11.81							
A-B	0.12							
A-C	6.31							

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)
08.15-08.30								
B-AC	0.53	7.21	0.074		0.1	0.1	1.2	
C-AB	0.04	16.80	0.002		0.0	0.0	0.0	
C-A	11.81							
A-B	0.12							
A-C	6.31							

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)
08.30-08.45								
B-AC	0.53	7.21	0.074		0.1	0.1	1.2	
C-AB	0.04	16.80	0.002		0.0	0.0	0.0	
C-A	11.81							
A-B	0.12							
A-C	6.31							

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)
08.45-09.00								
B-AC	0.53	7.21	0.074		0.1	0.1	1.2	
C-AB	0.04	16.80	0.002		0.0	0.0	0.0	
C-A	11.81							
A-B	0.12							
A-C	6.31							

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	31.8	31.8	4.7	0.15	4.7	0.15
C-AB	2.5	2.5	0.1	0.06	0.1	0.06
C-A	708.5	708.5				
A-B	7.0	7.0				
A-C	378.8	378.8				
ALL	1128.6	1128.6	4.8	0.00	4.8	0.00

* 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

****** PICADY 4 run completed.

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

[Printed at 12:30:16 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

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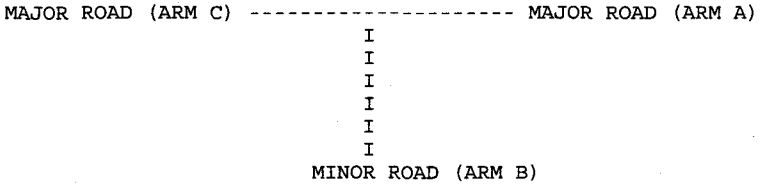
Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Northern Site Access\
B4030 jc with100units-TotTraffExc Browne-PM Peak.vpi"
(drive-on-the-left) at 09:11:36 on Wednesday, 27 September 2006

RUN TITLE
****
B4030 jctwith100units-2014 TotTraf ExcBrowne-PM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS B4030(E)
ARM B IS Site Access
ARM C IS B4030(W)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B	
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.30 M.
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	2.20 M.
- VISIBILITY	(VC-B)	160.0 M.
- BLOCKS TRAFFIC		YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	160.0 M.
- VISIBILITY TO RIGHT	(VB-A)	160.0 M.
- LANE 1 WIDTH	(WB-C)	3.65 M.
- LANE 2 WIDTH	(WB-A)	0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.00				
	ARM A	0.000	0.038	0.962
		0.0	30.0	759.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.929	0.000	0.071
		13.0	0.0	1.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.993	0.007	0.000
		456.0	3.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
B-AC	0.23	6.02	0.038		0.0	0.0	0.6	
C-AB	0.10	13.23	0.008		0.0	0.0	0.1	
C-A	7.55							
A-B	0.50							
A-C	12.65							

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)
17.15-17.30								
B-AC	0.23	6.02	0.038		0.0	0.0	0.6	
C-AB	0.11	13.23	0.008		0.0	0.0	0.1	
C-A	7.54							
A-B	0.50							
A-C	12.65							

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)
17.30-17.45								
B-AC	0.23	6.02	0.038		0.0	0.0	0.6	
C-AB	0.11	13.23	0.008		0.0	0.0	0.1	
C-A	7.54							
A-B	0.50							
A-C	12.65							

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)
17.45-18.00								
B-AC	0.23	6.02	0.038		0.0	0.0	0.6	
C-AB	0.11	13.23	0.008		0.0	0.0	0.1	
C-A	7.54							
A-B	0.50							
A-C	12.65							

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	13.8	13.8	2.3	0.17	2.3	0.17
C-AB	6.3	6.3	0.5	0.08	0.5	0.08
C-A	452.7	452.7				
A-B	30.0	30.0				
A-C	759.0	759.0				
ALL	1261.8	1261.8	2.9	0.00	2.9	0.00

* 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

****** PICADY 4 run completed.

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

[Printed at 12:35:27 on 27/09/2006]

APPENDIX T

Capacity Analysis – North Western Access

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Shakespeare Drive\
Shakespeare Drive Total Traffic Exc Browne AM.vai"
(drive-on-the-left) at 08:38:37 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

****

RUN TITLE

****

Shakespeare Drive 2014 Total traffic Excluding Browne AM Peak

INPUT DATA

****

ARM A - Shakespeare Drive
ARM B - Middleton Stanley Road (E)
ARM C - Site Access
ARM D - Middleton Stanley Road (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 ARM A	I	3.80	I	7.10	I	6.90	I	20.00	I	50.00	I	44.0	I	0.551	I	24.524
I ARM B	I	3.70	I	7.10	I	14.40	I	20.00	I	50.00	I	41.0	I	0.587	I	27.379
I ARM C	I	3.50	I	7.40	I	30.00	I	20.00	I	50.00	I	39.0	I	0.625	I	30.598
I ARM D	I	3.50	I	8.00	I	4.00	I	10.00	I	50.00	I	57.0	I	0.466	I	19.391

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.00 - 09.00					
	ARM A	0.000	0.662	0.043	0.294
		0.0	306.0	20.0	136.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.154	0.000	0.118	0.728
		59.0	0.0	45.0	278.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.173	0.423	0.000	0.404
		18.0	44.0	0.0	42.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.047	0.837	0.116	0.000
		21.0	374.0	52.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
ARM A	7.70	20.30	0.379		0.0	0.6	8.8	
ARM B	6.37	25.36	0.251		0.0	0.3	4.9	
ARM C	1.73	25.69	0.067		0.0	0.1	1.1	
ARM D	7.32	18.45	0.397		0.0	0.7	9.4	

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)
08.15-08.30								
ARM A	7.70	20.27	0.380		0.6	0.6	9.1	
ARM B	6.37	25.35	0.251		0.3	0.3	5.0	
ARM C	1.73	25.67	0.067		0.1	0.1	1.1	
ARM D	7.32	18.45	0.397		0.7	0.7	9.8	

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)
08.30-08.45								
ARM A	7.70	20.27	0.380		0.6	0.6	9.2	
ARM B	6.37	25.35	0.251		0.3	0.3	5.0	
ARM C	1.73	25.67	0.067		0.1	0.1	1.1	
ARM D	7.32	18.45	0.397		0.7	0.7	9.8	

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)
08.45-09.00								
ARM A	7.70	20.27	0.380		0.6	0.6	9.2	
ARM B	6.37	25.35	0.251		0.3	0.3	5.0	
ARM C	1.73	25.67	0.067		0.1	0.1	1.1	
ARM D	7.32	18.45	0.397		0.7	0.7	9.8	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.1	
08.30	0.1	
08.45	0.1	
09.00	0.1	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.7	*
08.30	0.7	*
08.45	0.7	*
09.00	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	462.0	462.0	36.2	0.08	36.3	0.08
B	382.2	382.2	20.0	0.05	20.0	0.05
C	103.8	103.8	4.3	0.04	4.3	0.04
D	439.2	439.2	38.9	0.09	38.9	0.09
ALL	1387.2	1387.2	99.4	0.07	99.4	0.07

* 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 12:50:19 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Shakespeare Drive\
Shakespeare Drive Total Traffic Exc Browne PM.vai"
(drive-on-the-left) at 08:38:42 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Shakespeare Drive 2014 Total traffic Excluding Browne PM Peak

INPUT DATA

ARM A - Shakespeare Drive
ARM B - Middleton Stanley Road (E)
ARM C - Site Access
ARM D - Middleton Stanley Road (W)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.80	7.10	6.90	20.00	50.00	44.0	0.551	24.524
ARM B	3.70	7.10	14.40	20.00	50.00	41.0	0.587	27.379
ARM C	3.50	7.40	30.00	20.00	50.00	39.0	0.625	30.598
ARM D	3.50	8.00	4.00	10.00	50.00	57.0	0.466	19.391

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
17.00 - 18.00		TURNING PROPORTIONS			
	ARM A	0.000	0.644	0.099	0.257
		0.0	123.0	19.0	49.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.451	0.000	0.060	0.489
		343.0	0.0	46.0	372.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.165	0.369	0.000	0.466
		17.0	38.0	0.0	48.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.265	0.641	0.095	0.000
		123.0	298.0	44.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
ARM A	3.18	21.06	0.151		0.0	0.2	2.6	
ARM B	12.68	26.29	0.482		0.0	0.9	13.4	
ARM C	1.72	22.68	0.076		0.0	0.1	1.2	
ARM D	7.75	16.31	0.475		0.0	0.9	12.8	

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)
17.15-17.30								
ARM A	3.18	21.03	0.151		0.2	0.2	2.7	
ARM B	12.68	26.28	0.482		0.9	0.9	13.9	
ARM C	1.72	22.64	0.076		0.1	0.1	1.2	
ARM D	7.75	16.30	0.475		0.9	0.9	13.4	

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)
17.30-17.45								
ARM A	3.18	21.03	0.151		0.2	0.2	2.7	
ARM B	12.68	26.28	0.482		0.9	0.9	13.9	
ARM C	1.72	22.64	0.076		0.1	0.1	1.2	
ARM D	7.75	16.30	0.475		0.9	0.9	13.5	

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)
17.45-18.00								
ARM A	3.18	21.03	0.151		0.2	0.2	2.7	
ARM B	12.68	26.28	0.482		0.9	0.9	13.9	
ARM C	1.72	22.64	0.076		0.1	0.1	1.2	
ARM D	7.75	16.30	0.475		0.9	0.9	13.5	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.2	
17.30	0.2	
17.45	0.2	
18.00	0.2	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.9	*
17.30	0.9	*
17.45	0.9	*
18.00	0.9	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.1
17.30	0.1
17.45	0.1
18.00	0.1

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.9	*
17.30	0.9	*
17.45	0.9	*
18.00	0.9	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	190.8	190.8	10.6	0.06	10.6	0.06
B	760.8	760.8	55.1	0.07	55.2	0.07
C	103.2	103.2	4.9	0.05	4.9	0.05
D	465.0	465.0	53.3	0.11	53.3	0.11
ALL	1519.8	1519.8	123.9	0.08	124.0	0.08

* 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 12:50:43 on 27/09/2006]

APPENDIX U

Capacity Analysis – Southern Access Junction

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
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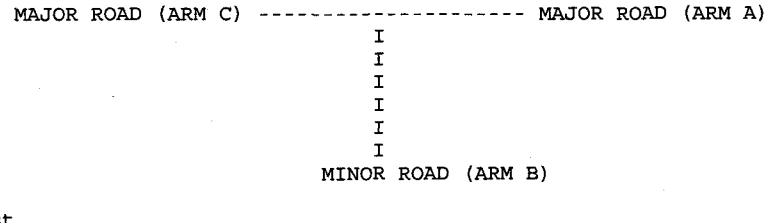
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Southern Site Access\
Bypass-S SiteAcc-TotTraffExc Browne-AM Peak.vpi"
(drive-on-the-left) at 09:11:44 on Wednesday, 27 September 2006

RUN TITLE
****
Bypass-S Site Acc-2014 TotTraf ExcBrowne-AM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS Bypass West
ARM B IS Site Access
ARM C IS Bypass East

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 3.50 M.
- VISIBILITY	(VC-B) 160.0 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
08.00 - 09.00				
	ARM A	0.000	0.041	0.959
		0.0	6.0	141.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.047	0.000	0.953
		8.0	0.0	164.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.486	0.514	0.000
		107.0	113.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
B-AC	2.87	11.25	0.255		0.0	0.3	4.9	
C-A	1.78							
C-B	1.89	11.99	0.157		0.0	0.2	2.7	
A-B	0.10							
A-C	2.35							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.122	0.005	0.016	0.005	0.007
C-B	0.114	0.003		0.010	

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)
08.15-08.30								
B-AC	2.87	11.25	0.255		0.3	0.3	5.1	
C-A	1.78							
C-B	1.89	11.99	0.157		0.2	0.2	2.8	
A-B	0.10							
A-C	2.35							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.122	0.005	0.016	0.005	0.007
C-B	0.114	0.003		0.010	

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)
08.30-08.45								
B-AC	2.87	11.25	0.255		0.3	0.3	5.1	
C-A	1.78							
C-B	1.89	11.99	0.157		0.2	0.2	2.8	
A-B	0.10							
A-C	2.35							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.122	0.005	0.016	0.005	0.007
C-B	0.114	0.003		0.010	

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)
08.45-09.00								
B-AC	2.87	11.25	0.255		0.3	0.3	5.1	
C-A	1.78							
C-B	1.89	11.99	0.157		0.2	0.2	2.8	
A-B	0.10							
A-C	2.35							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.122	0.005	0.016	0.005	0.007
C-B	0.114	0.003		0.010	

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	172.2	172.2	20.2	0.12	20.2	0.12
C-A	107.1	107.1				
C-B	113.1	113.1	11.1	0.10	11.1	0.10
A-B	6.0	6.0				
A-C	141.0	141.0				
ALL	539.4	539.4	31.3	0.06	31.3	0.06

* 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

****** PICADY 4 run completed.

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

[Printed at 12:37:36 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Southern Site Access\
Bypass-S SiteAcc-TotTraffExc Browne-PM Peak.vpi"
(drive-on-the-left) at 09:11:49 on Wednesday, 27 September 2006

RUN TITLE
****
Bypass-S Site Acc-2014 TotTraf ExcBrowne-PM Peak.vpi

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA

MAJOR ROAD (ARM C) ---------- MAJOR ROAD (ARM A)
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Bypass West
ARM B IS Site Access
ARM C IS Bypass East

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 3.50 M.
- VISIBILITY	(VC-B) 160.0 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 160.0 M.
- VISIBILITY TO RIGHT	(VB-A) 160.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.00				
	ARM A	0.000	0.069	0.931
		0.0	9.0	121.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.046	0.000	0.954
		5.0	0.0	103.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.497	0.503	0.000
		170.0	172.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
B-AC	1.80	11.29	0.160		0.0	0.2	2.7	
C-A	2.83							
C-B	2.87	12.07	0.237		0.0	0.3	4.5	
A-B	0.15							
A-C	2.02							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.116	0.007	0.016	0.005	0.007
C-B	0.115	0.003		0.010	

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)
17.15-17.30								
B-AC	1.80	11.28	0.160		0.2	0.2	2.8	
C-A	2.83							
C-B	2.87	12.07	0.237		0.3	0.3	4.6	
A-B	0.15							
A-C	2.02							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.115	0.007	0.016	0.005	0.007
C-B	0.115	0.003		0.010	

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)
17.30-17.45								
B-AC	1.80	11.28	0.160		0.2	0.2	2.8	
C-A	2.83							
C-B	2.87	12.07	0.237		0.3	0.3	4.7	
A-B	0.15							
A-C	2.02							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.115	0.007	0.016	0.005	0.007
C-B	0.115	0.003		0.010	

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)
17.45-18.00								
B-AC	1.80	11.28	0.160		0.2	0.2	2.8	
C-A	2.83							
C-B	2.87	12.07	0.237		0.3	0.3	4.7	
A-B	0.15							
A-C	2.02							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.115	0.007	0.016	0.005	0.007
C-B	0.115	0.003		0.010	

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	108.0	108.0	11.2	0.10	11.2	0.10
C-A	170.0	170.0				
C-B	172.0	172.0	18.4	0.11	18.4	0.11
A-B	9.0	9.0				
A-C	121.2	121.2				
ALL	580.2	580.2	29.7	0.05	29.7	0.05

* 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

****** PICADY 4 run completed.

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

[Printed at 12:39:03 on 27/09/2006]

APPENDIX V

Capacity Analysis – Chesterton Link Road / Perimeter Road Junction

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

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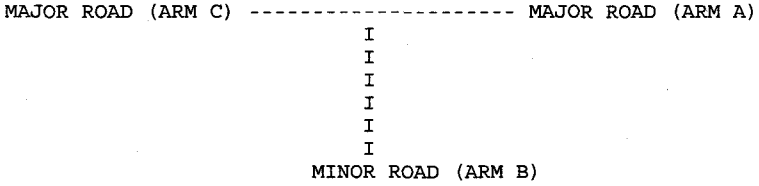
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Chesterton Priority\
Bypass-Chesterton-TotTraffExc Browne-AM Peak.vpi"
(drive-on-the-left) at 09:11:05 on Wednesday, 27 September 2006

RUN TITLE
****
Bypass-Chesterton-2014 TotTraf ExcBrowne-AM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS Bypass South
ARM B IS Chesterton
ARM C IS Bypass North

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.00 M.
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	3.50 M.
- VISIBILITY	(VC-B)	160.0 M.
- BLOCKS TRAFFIC		NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	160.0 M.
- VISIBILITY TO RIGHT	(VB-A)	160.0 M.
- LANE 1 WIDTH	(WB-C)	3.65 M.
- LANE 2 WIDTH	(WB-A)	0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
08.00 - 09.00				
	ARM A	0.000	0.000	1.000
		0.0	0.0	115.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	241.0
		(0.1)	(0.0)	(0.1)
	ARM C	0.214	0.786	0.000
		147.0	541.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
B-AC	4.02	12.30	0.327		0.0	0.5	6.9	
C-A	2.45							
C-B	9.02	12.14	0.743		0.0	2.7	35.2	
A-B	0.00							
A-C	1.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.088	0.014	0.016	0.004	0.005
C-B	0.116	0.002		0.011	

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)
08.15-08.30								
B-AC	4.02	12.30	0.327		0.5	0.5	7.2	
C-A	2.45							
C-B	9.02	12.14	0.743		2.7	2.8	41.1	
A-B	0.00							
A-C	1.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.087	0.014	0.016	0.004	0.005
C-B	0.116	0.002		0.011	

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)
08.30-08.45								
B-AC	4.02	12.30	0.327		0.5	0.5	7.2	
C-A	2.45							
C-B	9.02	12.14	0.743		2.8	2.8	42.0	
A-B	0.00							
A-C	1.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.087	0.014	0.016	0.004	0.005
C-B	0.116	0.002		0.011	

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)
08.45-09.00								
B-AC	4.02	12.30	0.327		0.5	0.5	7.3	
C-A	2.45							
C-B	9.02	12.14	0.743		2.8	2.8	42.3	
A-B	0.00							
A-C	1.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.087	0.014	0.016	0.004	0.005
C-B	0.116	0.002		0.011	

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.5	
08.30	0.5	
08.45	0.5	
09.00	0.5	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	2.7	***
08.30	2.8	***
08.45	2.8	***
09.00	2.8	***

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	241.2	241.2	28.6	0.12	28.6	0.12
C-A	147.0	147.0				
C-B	541.2	541.2	160.6	0.30	161.0	0.30
A-B	0.0	0.0				
A-C	115.2	115.2				
ALL	1044.6	1044.6	189.3	0.18	189.6	0.18

* 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

****** PICADY 4 run completed.

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

[Printed at 12:24:59 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAY 2001)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
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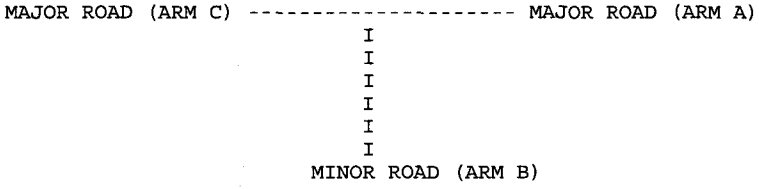
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\PICADY\September 2006\Chesterton Priority\
Bypass-Chesterton-TotTraffExc Browne-PM Peak.vpi"
(drive-on-the-left) at 09:11:10 on Wednesday, 27 September 2006

RUN TITLE
****
Bypass-Chesterton-2014 TotTraf ExcBrowne-PM Peak

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
****

INPUT DATA



ARM A IS Bypass South
ARM B IS Chesterton
ARM C IS Bypass North

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

DATA ITEM		MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W)	7.00 M.
CENTRAL RESERVE WIDTH	(WCR)	0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B)	3.50 M.
- VISIBILITY	(VC-B)	160.0 M.
- BLOCKS TRAFFIC		NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C)	160.0 M.
- VISIBILITY TO RIGHT	(VB-A)	160.0 M.
- LANE 1 WIDTH	(WB-C)	3.65 M.
- LANE 2 WIDTH	(WB-A)	0.00 M.

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.00				
	ARM A	0.000	0.000	1.000
		0.0	0.0	175.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	465.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.328	0.672	0.000
		129.0	264.0	0.0
		(0.1)	(0.1)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
B-AC	7.75	12.03	0.644		0.0	1.7	23.7	
C-A	2.15							
C-B	4.40	11.85	0.371		0.0	0.6	8.3	
A-B	0.00							
A-C	2.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.112	0.009	0.016	0.005	0.007
C-B	0.113	0.004		0.010	

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)
17.15-17.30								
B-AC	7.75	12.03	0.644		1.7	1.8	26.4	
C-A	2.15							
C-B	4.40	11.85	0.371		0.6	0.6	8.8	
A-B	0.00							
A-C	2.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.112	0.009	0.016	0.005	0.007
C-B	0.113	0.004		0.010	

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)
17.30-17.45								
B-AC	7.75	12.03	0.644		1.8	1.8	26.7	
C-A	2.15							
C-B	4.40	11.85	0.371		0.6	0.6	8.8	
A-B	0.00							
A-C	2.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.112	0.009	0.016	0.005	0.007
C-B	0.113	0.004		0.010	

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)
17.45-18.00								
B-AC	7.75	12.03	0.644		1.8	1.8	26.8	
C-A	2.15							
C-B	4.40	11.85	0.371		0.6	0.6	8.8	
A-B	0.00							
A-C	2.92							

EFFECT ON CAPACITY (PCU/MIN) OF MARGINAL CHANGES IN:

MARGINAL CHANGE:	LANE WIDTH (.1M)	MAJOR RD. WIDTH (.1M)	CENT RES WIDTH (.1M)	VIS TO LEFT (AHEAD FOR MAJOR) (M)	VISIBILITY TO RIGHT (M)
B-AC	0.112	0.009	0.016	0.005	0.007
C-B	0.113	0.004		0.010	

WARNING THE JUNCTION MODELLED CAN CARRY HIGH-SPEED MAJOR ROAD TRAFFIC. (AG23 REF. 8.4.2(v)).

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.7	**
17.30	1.8	**
17.45	1.8	**
18.00	1.8	**

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	465.0	465.0	103.7	0.22	103.8	0.22
C-A	129.0	129.0				
C-B	264.0	264.0	34.8	0.13	34.8	0.13
A-B	0.0	0.0				
A-C	175.2	175.2				
ALL	1033.2	1033.2	138.4	0.13	138.6	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

****** PICADY 4 run completed.

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

[Printed at 12:26:21 on 27/09/2006]

APPENDIX W

Capacity Analysis – Howes Lane / Middleton Stoney Road Junction

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Howes Lane Roundabout\Howes excl. Browne AM.vai"
(drive-on-the-left) at 08:38:21 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

****

RUN TITLE

****

Howes Lane Rbout - 2014 Total traffic excl Browne AM Peak

INPUT DATA

****

ARM A - Howes Lane
ARM B - Middleton Storey Road (E)
ARM C - Perimeter Road
ARM D - Middleton Storey Road (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 ARM A	I	2.90	I	7.10	I	21.60	I	20.00	I	54.00	I	55.0	I	0.532	I	25.315
I ARM B	I	3.50	I	6.90	I	7.50	I	20.00	I	54.00	I	48.0	I	0.515	I	23.140
I ARM C	I	3.50	I	7.10	I	11.30	I	25.00	I	54.00	I	31.0	I	0.575	I	26.846
I ARM D	I	3.50	I	7.10	I	13.70	I	20.00	I	54.00	I	41.0	I	0.559	I	26.499

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.00 - 09.00					
	ARM A	0.000	0.163	0.713	0.124
		0.0	111.0	484.0	84.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.164	0.000	0.404	0.432
		75.0	0.0	184.0	197.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.612	0.289	0.000	0.098
		218.0	103.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.212	0.723	0.064	0.000
		66.0	225.0	20.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
ARM A	11.32	22.24	0.509		0.0	1.0	14.7	
ARM B	7.60	18.12	0.419		0.0	0.7	10.3	
ARM C	5.93	23.46	0.253		0.0	0.3	4.9	
ARM D	5.18	22.83	0.227		0.0	0.3	4.3	

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)
08.15-08.30								
ARM A	11.32	22.23	0.509		1.0	1.0	15.4	
ARM B	7.60	18.09	0.420		0.7	0.7	10.8	
ARM C	5.93	23.43	0.253		0.3	0.3	5.1	
ARM D	5.18	22.81	0.227		0.3	0.3	4.4	

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)
08.30-08.45								
ARM A	11.32	22.23	0.509		1.0	1.0	15.5	
ARM B	7.60	18.09	0.420		0.7	0.7	10.8	
ARM C	5.93	23.43	0.253		0.3	0.3	5.1	
ARM D	5.18	22.81	0.227		0.3	0.3	4.4	

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)
08.45-09.00								
ARM A	11.32	22.23	0.509		1.0	1.0	15.5	
ARM B	7.60	18.09	0.420		0.7	0.7	10.8	
ARM C	5.93	23.43	0.253		0.3	0.3	5.1	
ARM D	5.18	22.81	0.227		0.3	0.3	4.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.0	*
08.30	1.0	*
08.45	1.0	*
09.00	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.7	*
08.30	0.7	*
08.45	0.7	*
09.00	0.7	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.3
08.30	0.3
08.45	0.3
09.00	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	679.2	679.2	61.2	0.09	61.2	0.09
B	456.0	456.0	42.7	0.09	42.8	0.09
C	355.8	355.8	20.1	0.06	20.1	0.06
D	310.8	310.8	17.5	0.06	17.5	0.06
ALL	1801.8	1801.8	141.5	0.08	141.6	0.08

* 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 12:48:33 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Howes Lane Roundabout\Howes excl. Browne PM.vai"
(drive-on-the-left) at 08:38:26 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

****

RUN TITLE

****

Howes Lane Rbout - 2014 Total traffic excl Browne PM Peak

INPUT DATA

****

ARM A - Howes Lane
ARM B - Middleton Storey Road (E)
ARM C - Perimeter Road
ARM D - Middleton Storey Road (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 ARM A	I	2.90	I	7.10	I	21.60	I	20.00	I	54.00	I	55.0	I	0.532	I	25.315
I ARM B	I	3.50	I	6.90	I	7.50	I	20.00	I	54.00	I	48.0	I	0.515	I	23.140
I ARM C	I	3.50	I	7.10	I	11.30	I	25.00	I	54.00	I	31.0	I	0.575	I	26.846
I ARM D	I	3.50	I	7.10	I	13.70	I	20.00	I	54.00	I	41.0	I	0.559	I	26.499

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
17.00 - 18.00					
	ARM A	0.000	0.184	0.623	0.194
		0.0	75.0	254.0	79.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.209	0.000	0.262	0.529
		98.0	0.0	123.0	248.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.775	0.189	0.000	0.036
		497.0	121.0	0.0	23.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.173	0.777	0.049	0.000
		60.0	269.0	17.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
ARM A	6.80	21.72	0.313		0.0	0.5	6.6	
ARM B	7.82	20.15	0.388		0.0	0.6	9.1	
ARM C	10.68	22.79	0.469		0.0	0.9	12.6	
ARM D	5.77	19.87	0.290		0.0	0.4	5.9	

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)
17.15-17.30								
ARM A	6.80	21.70	0.313		0.5	0.5	6.8	
ARM B	7.82	20.14	0.388		0.6	0.6	9.5	
ARM C	10.68	22.77	0.469		0.9	0.9	13.1	
ARM D	5.77	19.83	0.291		0.4	0.4	6.1	

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)
17.30-17.45								
ARM A	6.80	21.70	0.313		0.5	0.5	6.8	
ARM B	7.82	20.14	0.388		0.6	0.6	9.5	
ARM C	10.68	22.77	0.469		0.9	0.9	13.2	
ARM D	5.77	19.83	0.291		0.4	0.4	6.1	

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)
17.45-18.00								
ARM A	6.80	21.70	0.313		0.5	0.5	6.8	
ARM B	7.82	20.14	0.388		0.6	0.6	9.5	
ARM C	10.68	22.77	0.469		0.9	0.9	13.2	
ARM D	5.77	19.83	0.291		0.4	0.4	6.1	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.5	
17.30	0.5	
17.45	0.5	
18.00	0.5	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.9	*
17.30	0.9	*
17.45	0.9	*
18.00	0.9	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.4
17.30	0.4
17.45	0.4
18.00	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	408.0	408.0	27.1	0.07	27.1	0.07
B	469.2	469.2	37.6	0.08	37.6	0.08
C	640.8	640.8	52.2	0.08	52.2	0.08
D	346.2	346.2	24.3	0.07	24.3	0.07
ALL	1864.2	1864.2	141.2	0.08	141.2	0.08

* 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

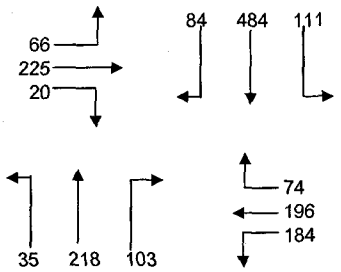
****** ARCADY 5 run completed.

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

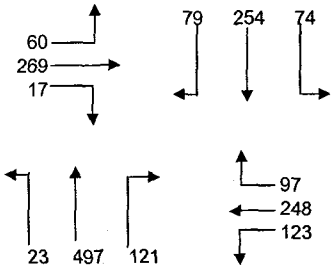
[Printed at 12:49:02 on 27/09/2006]

Howes Lane Roundabout

AM PEAK



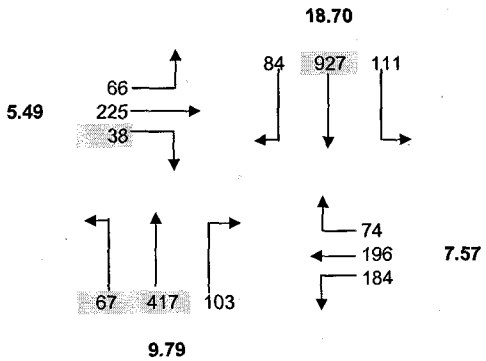
PM PEAK



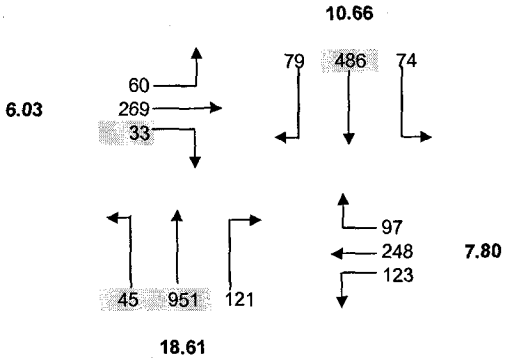
Increase

91.5 %

AM PEAK



PM PEAK



TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

FOR SALES AND DISTRIBUTION INFORMATION,
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TRL SOFTWARE BUREAU
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EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Howes Lane Roundabout\
Howes excl. Browne AM-Sensitivity Test.vai"
(drive-on-the-left) at 12:56:00 on Monday, 2 October 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Howes Lane Rbout-excluding Browne AM Peak_Sensitivity Test

INPUT DATA

ARM A - Howes Lane
ARM B - Middleton Storey Road (E)
ARM C - Perimeter Road
ARM D - Middleton Storey Road (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 ARM A	I	2.90	I	7.10	I	21.60	I	20.00	I	54.00	I	55.0	I	0.532	I	25.315
I ARM B	I	3.50	I	6.90	I	7.50	I	20.00	I	54.00	I	48.0	I	0.515	I	23.140
I ARM C	I	3.50	I	7.10	I	11.30	I	25.00	I	54.00	I	31.0	I	0.575	I	26.846
I ARM D	I	3.50	I	7.10	I	13.70	I	20.00	I	54.00	I	41.0	I	0.559	I	26.499

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.00 - 09.00					
	ARM A	0.000	0.099	0.826	0.075
		0.0	111.0	927.0	84.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.163	0.000	0.405	0.432
		74.0	0.0	184.0	196.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.710	0.175	0.000	0.114
		417.0	103.0	0.0	67.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.201	0.684	0.116	0.000
		66.0	225.0	38.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
ARM A	18.70	22.08	0.847		0.0	5.0	63.4	
ARM B	7.57	14.29	0.530		0.0	1.1	15.6	
ARM C	9.79	23.49	0.417		0.0	0.7	10.3	
ARM D	5.49	20.99	0.261		0.0	0.4	5.2	

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)
08.15-08.30								
ARM A	18.70	22.07	0.847		5.0	5.2	76.8	
ARM B	7.57	14.14	0.535		1.1	1.1	16.9	
ARM C	9.79	23.45	0.417		0.7	0.7	10.7	
ARM D	5.49	20.96	0.262		0.4	0.4	5.3	

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)
08.30-08.45								
ARM A	18.70	22.07	0.847		5.2	5.3	79.3	
ARM B	7.57	14.14	0.535		1.1	1.1	17.1	
ARM C	9.79	23.45	0.417		0.7	0.7	10.7	
ARM D	5.49	20.96	0.262		0.4	0.4	5.3	

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)
08.45-09.00								
ARM A	18.70	22.07	0.847		5.3	5.4	80.4	
ARM B	7.57	14.14	0.535		1.1	1.1	17.2	
ARM C	9.79	23.45	0.417		0.7	0.7	10.7	
ARM D	5.49	20.96	0.262		0.4	0.4	5.3	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	5.0	*****
08.30	5.2	*****
08.45	5.3	*****
09.00	5.4	*****

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.1	*
08.30	1.1	*
08.45	1.1	*
09.00	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.7	*
08.30	0.7	*
08.45	0.7	*
09.00	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.4
08.30	0.4
08.45	0.4
09.00	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	1122.0	1122.0	299.9	0.27	300.5	0.27
B	454.2	454.2	66.7	0.15	66.8	0.15
C	587.4	587.4	42.4	0.07	42.4	0.07
D	329.4	329.4	21.1	0.06	21.1	0.06
ALL	2493.0	2493.0	430.1	0.17	430.8	0.17

* 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 12:58:23 on 02/10/2006]

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Howes Lane Roundabout\
Howes excl. Browne PM-Sensitivity Test.vai"
(drive-on-the-left) at 12:57:07 on Monday, 2 October 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

Howes Lane Rbout-excluding Browne PM Peak_Sensitivity Test

INPUT DATA

ARM A - Howes Lane
ARM B - Middleton Storey Road (E)
ARM C - Perimeter Road
ARM D - Middleton Storey Road (W)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.90	7.10	21.60	20.00	54.00	55.0	0.532	25.315
ARM B	3.50	6.90	7.50	20.00	54.00	48.0	0.515	23.140
ARM C	3.50	7.10	11.30	25.00	54.00	31.0	0.575	26.846
ARM D	3.50	7.10	13.70	20.00	54.00	41.0	0.559	26.499

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
17.00 - 18.00					
	ARM A	0.000	0.116	0.761	0.124
		0.0	74.0	486.0	79.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.207	0.000	0.263	0.530
		97.0	0.0	123.0	248.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.851	0.108	0.000	0.040
		951.0	121.0	0.0	45.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.166	0.743	0.091	0.000
		60.0	269.0	33.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
ARM A	10.66	21.60	0.494		0.0	1.0	13.9	
ARM B	7.80	18.03	0.433		0.0	0.8	10.9	
ARM C	18.61	22.81	0.816		0.0	4.1	54.0	
ARM D	6.03	15.77	0.382		0.0	0.6	8.8	

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)
17.15-17.30								
ARM A	10.66	21.57	0.494		1.0	1.0	14.5	
ARM B	7.80	18.00	0.433		0.8	0.8	11.4	
ARM C	18.61	22.78	0.817		4.1	4.3	63.1	
ARM D	6.03	15.62	0.386		0.6	0.6	9.3	

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)
17.30-17.45								
ARM A	10.66	21.57	0.494		1.0	1.0	14.6	
ARM B	7.80	18.00	0.433		0.8	0.8	11.4	
ARM C	18.61	22.78	0.817		4.3	4.3	64.6	
ARM D	6.03	15.62	0.386		0.6	0.6	9.4	

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)
17.45-18.00								
ARM A	10.66	21.57	0.494		1.0	1.0	14.6	
ARM B	7.80	18.00	0.433		0.8	0.8	11.4	
ARM C	18.61	22.78	0.817		4.3	4.4	65.3	
ARM D	6.03	15.62	0.386		0.6	0.6	9.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.0	*
17.30	1.0	*
17.45	1.0	*
18.00	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.8	*
17.30	0.8	*
17.45	0.8	*
18.00	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	4.1	****
17.30	4.3	****
17.45	4.3	****
18.00	4.4	****

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.6	*
17.30	0.6	*
17.45	0.6	*
18.00	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	639.6	639.6	57.6	0.09	57.6	0.09
B	468.0	468.0	45.1	0.10	45.1	0.10
C	1116.6	1116.6	246.9	0.22	247.3	0.22
D	361.8	361.8	36.9	0.10	36.9	0.10
ALL	2586.0	2586.0	386.5	0.15	387.0	0.15

* 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 12:58:49 on 02/10/2006]

APPENDIX X

Capacity Analysis – A41 Esso Roundabout

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\A41 Roundabout\
A41 Roundabout- Total Traffic Exc Browne AM Peak.vai"
(drive-on-the-left) at 08:37:48 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

A41 Roundbaout-2014 Total Traffic Excl Browne AM Peak

INPUT DATA

ARM A - B4030 Oxford Road
ARM B - A41 East
ARM C - A41 South
ARM D - Services

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	11.20	30.00	18.00	64.00	40.0	0.729	48.736
ARM B	3.00	6.00	7.60	59.00	64.00	41.0	0.468	21.716
ARM C	8.00	12.00	30.00	41.00	64.00	44.0	0.778	53.275
ARM D	7.70	9.10	1.70	14.00	64.00	40.0	0.623	38.557

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.00 - 09.00					
	ARM A	0.000	0.348	0.623	0.029
		0.0	342.0	613.0	29.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.878	0.000	0.000	0.122
		318.0	0.0	0.0	44.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.421	0.543	0.000	0.035
		741.0	956.0	0.0	62.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.314	0.307	0.379	0.000
		48.0	47.0	58.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
ARM A	16.40	35.90	0.457		0.0	0.8	12.2	
ARM B	6.03	16.28	0.370		0.0	0.6	8.4	
ARM C	29.32	48.24	0.608		0.0	1.5	22.3	
ARM D	2.55	17.71	0.144		0.0	0.2	2.5	

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)
08.15-08.30								
ARM A	16.40	35.85	0.457		0.8	0.8	12.6	
ARM B	6.03	16.26	0.371		0.6	0.6	8.8	
ARM C	29.32	48.21	0.608		1.5	1.5	23.1	
ARM D	2.55	17.63	0.145		0.2	0.2	2.5	

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)
08.30-08.45								
ARM A	16.40	35.85	0.457		0.8	0.8	12.6	
ARM B	6.03	16.26	0.371		0.6	0.6	8.8	
ARM C	29.32	48.21	0.608		1.5	1.5	23.2	
ARM D	2.55	17.63	0.145		0.2	0.2	2.5	

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)
08.45-09.00								
ARM A	16.40	35.85	0.457		0.8	0.8	12.6	
ARM B	6.03	16.26	0.371		0.6	0.6	8.8	
ARM C	29.32	48.21	0.608		1.5	1.5	23.2	
ARM D	2.55	17.63	0.145		0.2	0.2	2.5	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.8	*
08.30	0.8	*
08.45	0.8	*
09.00	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	0.6	*
08.30	0.6	*
08.45	0.6	*
09.00	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.5	**
08.30	1.5	**
08.45	1.5	**
09.00	1.5	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	984.0	984.0	50.0	0.05	50.1	0.05
B	361.8	361.8	34.8	0.10	34.8	0.10
C	1759.2	1759.2	91.9	0.05	91.9	0.05
D	153.0	153.0	10.0	0.07	10.0	0.07
ALL	3258.0	3258.0	186.8	0.06	186.8	0.06

* 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 12:40:47 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\A41 Roundabout\
A41 Roundabout- Total Traffic Exc Browne PM Peak.vai"
(drive-on-the-left) at 08:37:53 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

A41 Roundbaout-2014 Total Traffic Excluding Browne PM Peak

INPUT DATA

ARM A - B4030 Oxford Road
ARM B - A41 East
ARM C - A41 South
ARM D - Services

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	11.20	30.00	18.00	64.00	40.0	0.729	48.736
ARM B	3.00	6.00	7.60	59.00	64.00	41.0	0.468	21.716
ARM C	8.00	12.00	30.00	41.00	64.00	44.0	0.778	53.275
ARM D	7.70	9.10	1.70	14.00	64.00	40.0	0.623	38.557

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
17.00 - 18.00					
	ARM A	0.000	0.386	0.580	0.033
		0.0	42.9	64.4	3.7
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.941	0.000	0.000	0.059
		45.9	0.0	0.0	2.9
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.547	0.422	0.000	0.030
		102.7	79.2	0.0	5.7
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.288	0.256	0.456	0.000
		3.6	3.2	5.7	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
ARM A	18.50	38.08	0.486		0.0	0.9	13.7	
ARM B	8.13	15.99	0.509		0.0	1.0	14.5	
ARM C	31.27	46.52	0.672		0.0	2.0	29.1	
ARM D	2.08	15.02	0.138		0.0	0.2	2.3	

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)
17.15-17.30								
ARM A	18.50	38.04	0.486		0.9	0.9	14.1	
ARM B	8.13	15.97	0.509		1.0	1.0	15.4	
ARM C	31.27	46.47	0.673		2.0	2.0	30.5	
ARM D	2.08	14.90	0.140		0.2	0.2	2.4	

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)
17.30-17.45								
ARM A	18.50	38.04	0.486		0.9	0.9	14.2	
ARM B	8.13	15.97	0.509		1.0	1.0	15.4	
ARM C	31.27	46.47	0.673		2.0	2.0	30.7	
ARM D	2.08	14.90	0.140		0.2	0.2	2.4	

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)
17.45-18.00								
ARM A	18.50	38.04	0.486		0.9	0.9	14.2	
ARM B	8.13	15.97	0.509		1.0	1.0	15.5	
ARM C	31.27	46.47	0.673		2.0	2.1	30.7	
ARM D	2.08	14.90	0.140		0.2	0.2	2.4	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.9	*
17.30	0.9	*
17.45	0.9	*
18.00	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.0	*
17.30	1.0	*
17.45	1.0	*
18.00	1.0	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	2.0	**
17.30	2.0	**
17.45	2.0	**
18.00	2.1	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1110.0	1110.0	56.2	0.05	56.2	0.05
B	487.8	487.8	60.8	0.12	60.8	0.12
C	1876.2	1876.2	121.1	0.06	121.1	0.06
D	124.8	124.8	9.6	0.08	9.6	0.08
ALL	3598.8	3598.8	247.6	0.07	247.7	0.07

* 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.

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[Printed at 12:41:30 on 27/09/2006]

APPENDIX Y

Neighbouring Employment Land – Trip Generation

1 Employment Site - Trip Generation

1.1 GROSS PERSON TRIP GENERATION

1.1.1 The forecast vehicular trip generation of the employment development to the east of the A41 has been taken from English business park sites contained in the TRICS database. . It is considered that this will provide a fair assessment of the likely vehicular trip generation of the proposed employment land, particularly given that it would be located adjacent to the existing high quality and frequent bus services along the A41 corridor.

1.1.2 The resultant vehicular trips are shown in Table 1.1 while full details of the TRICS outputs are attached within this Appendix.

Table 1.1: Employment Vehicular Trip Rates and Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Trip Rate – Vehs/100sqm	1.42	0.12	1.54	0.12	1.09	1.21
Total Trips (Vehs)	852	72	924	72	654	726

Source: TRICS database

1.1.3 Based on the above, the 60,000 sqm employment development would generate a total of 924 vehicle trips during the morning peak hour. The corresponding number of vehicle trips during the evening peak hour is predicted to be 726.

1.1.4 In order to establish the total person trip generation of the employment development, 2001 Census data for employment journeys that have a destination within Bicester has been used to establish the number of trips that would be generated by other modes of travel. As can be seen from Table 1.2, car drivers account for 68% of all employment person trips.

Table 1.2: Mode Share of Employment Trips

Mode of Travel	Percentage Share
Non-Car	24%
Car Driver	68%
Car Passenger	8%
Total	**100%**

Source: 2001 Census

1.1.5 Table 1.3 summarises the number of person trips that would be generated by the proposed employment development, derived by factoring-up the vehicle trips to represent person trips by all modes of travel. It is important to note that the number of car drivers does not reduce as a result of this adjustment.

Table 1.3: Total Employment Person Trips – Gross Generation

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	301	25	326	25	231	256
Car Driver	852	72	924	72	654	726
Car Passenger	100	8	109	8	77	85
Total	**1,253**	**106**	**1,359**	**106**	**962**	**1,068**

1.2 ALLOWANCE FOR REDUCED CAR PARKING PROVISION

1.2.1 It is important to note that the resultant person trips shown in Table 1.3 are derived using vehicular trip rates associated with existing employment developments that have been operational for some time and do not therefore reflect the benefits of local and national polices aimed at reducing car use. The effect of these polices is difficult to quantify. However, one area which can be examined is the relationship between the provision of on-site car parking spaces and the vehicular mode share.

1.2.2 The sites within the TRICS database used to derive the vehicular trip rate reflect a parking provision of one space per 27 sqm whereas, in accordance with current local and national policy, parking at the proposed development is likely to be at a rate no greater than one space per 30 sqm. Indeed, given that the employment development is likely to incorporate a range of employment uses other than B1 (which will result in a lower number of spaces per GFA), the overall parking provision is likely to be between 1 space per 30 sqm and 1 space per 50 sqm. Therefore, for the purposes of this assessment, an overall provision of 1 space per 35 sqm has been applied.

1.2.3 It is considered that the reduced parking provision at the development, supported by a Mobility Management Plan, will induce a proportionate mode shift away from car use when compared to sites within the TRICS database that exhibit higher parking provisions.

1.2.4 Therefore, a mode shift of 30% [(35-27) / 27] away from car drivers has been applied in order to reflect the reduced parking provision that will be provided. These trips have been apportioned onto the other modes of travel, including car passengers, based on the existing proportions (Table 1.4 refers).

Table 1.4: Total Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	+189	+16	+205	+16	+145	+161
Car Driver	-252	-21	-274	-21	-194	-215
Car Passenger	+63	+5	+68	+5	+48	+54
Total	**0**	**0**	**0**	**0**	**0**	**0**

1.2.5 Table 1.5 shows the resultant mode share of the total person trips which would be generated by the employment components of the site, derived by applying the allowance for reduced parking provision (Table 1.4) to the total trips (Table 1.3).

Table 1.5: Total Employment Person Trips Allowing for Reduced Car Parking

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	490	41	531	41	376	418
Car Driver	600	51	650	51	460	511
Car Passenger	163	14	177	14	125	139
Total	**1,253**	**106**	**1,359**	**106**	**962**	**1,068**

1.3 ALLOWANCE FOR EMPLOYMENT MODE SHIFT

1.3.1 Because of the juxtaposition of the South West Bicester residential development and the proposed employment development on land to the east of the A41 it is anticipated that a proportion of the employment opportunities provided on proposed employment site will be satisfied by future residents of the proposed South West Bicester development. The trip generation of the South West Bicester development site (presented in Appendix J of this Transport Assessment report) identifies the likely mode shift in commuting trips that is likely to occur because of the immediate proximity of the two developments.

1.3.2 For ease of reference, the resultant mode shift of commuting trips generated by the South West Bicester development site (which, when inverted, also represents the mode shift of trips that needs to be applied to the total trip generation of the employment use) has been reproduced in Table 1.6 below.

Table 1.6: Allowance for Employment Mode Shift

	AM Peak Hour 0800-0900 hrs			PM Peak Hour 1700-1800 hrs		
	In	Out	Total	In	Out	Total
Non-Car	+41	+10	+51	+19	+43	+61
Car Driver	-28	-7	-35	-13	-30	-43
Car Passenger	-13	-3	-16	-6	-13	-18
Total	**0**	**0**	**0**	**0**	**0**	**0**

1.4 EXTERNAL EMPLOYMENT TRIPS

1.4.1 Table 1.7 shows the total number of external trips that would be generated by the proposed employment site on neighbouring land. The figures have been derived by applying the reductions due to the mode shift of employment trips (Table 1.6) to the total employment trips (Table 1.5).

Table 1.7: External Employment Person Trips

	AM Peak Hour 0800-0900			PM Peak Hour 1700-1800		
	In	Out	Total	In	Out	Total
Non-Car	531	51	583	60	419	479
Car Driver	571	44	615	38	430	468
Car Passenger	150	11	161	8	113	121
Total	**1,253**	**106**	**1,359**	**106**	**962**	**1,068**

1.4.2 The resultant car driver trip rates correspond to 1.03 and 0.78 vehs / 100sqm GFA during the morning and evening peak hours respectively.

1.5 TRIP DISTRIBUTION & ASSIGNMENT

1.5.1 The forecast vehicular trips have been assigned onto the local highway network in accordance with zonal distributions derived from the 2001 Census. Data relating to commuting trips associated with the existing employment uses within Bicester has been used to derive the vehicular distribution for the employment development. The resultant zonal distribution is summarised in Table 1.8 while the depiction of the areas covered by each of the zones is included within this Appendix.

Table 1.8: Employment Site Vehicular Trip Distribution

Area	Percentage Distribution
Bicester	40.8%
North	8.3%
East	11.4%
South (M40)	2.9%
South (A34)	32.5%
West	4.1%
Total	**100%**

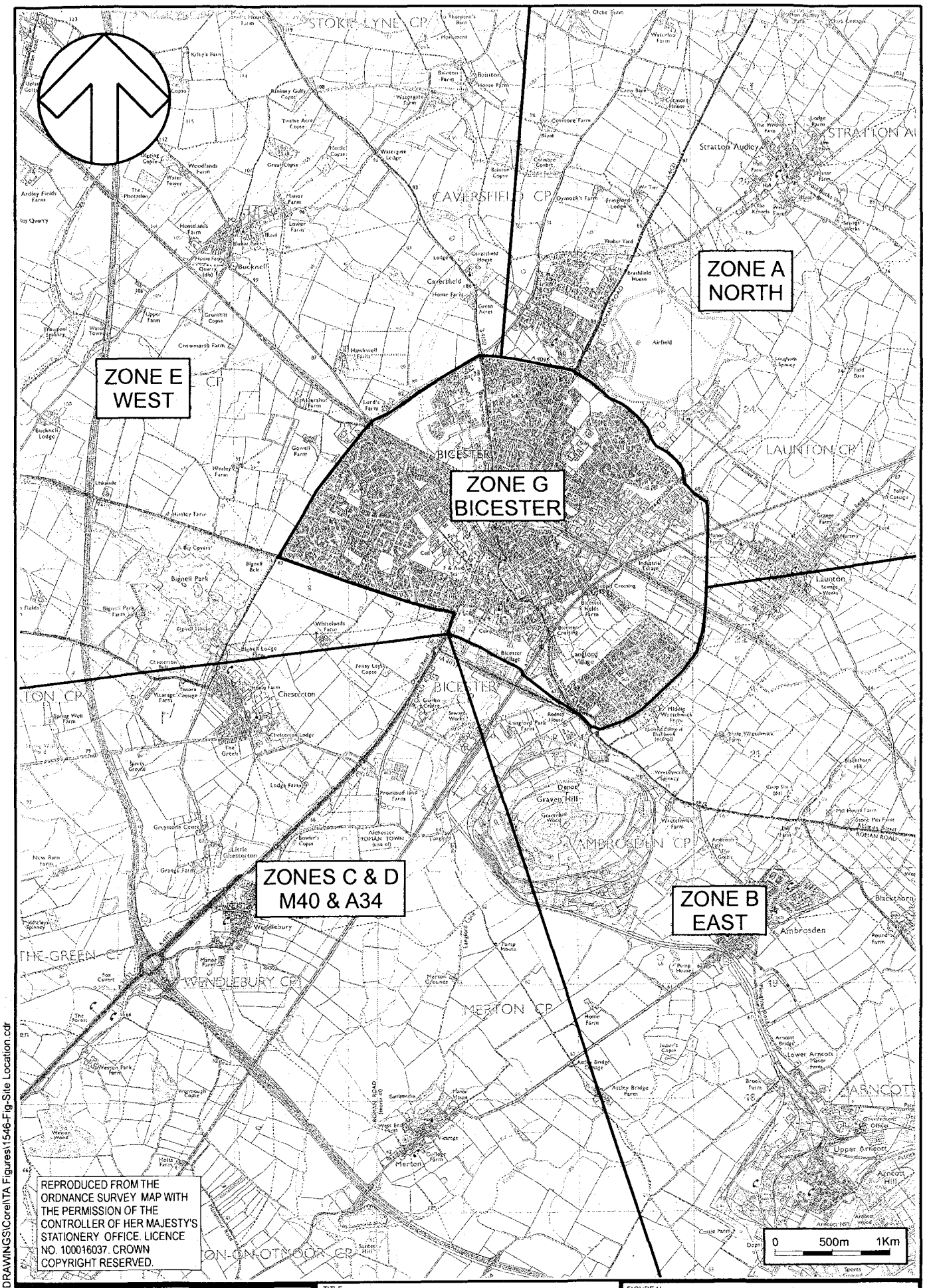
Source: 2001 Census

1.5.2 The peak hour vehicular trips shown in Table 1.7 have then been assigned to the local highway network based on the distribution in Table 1.8. For the purposes of this assessment it has been assumed that only one point of the access to the neighbouring employment development will be provided; off the A41 to the south of the existing A41 ESSO roundabout. The resultant assignments of trips to each of the zones are summarised in Table 1.9 below.

Table 1.9 : Employment Site Vehicular Assignment

Zone	Access Junction	%	Routing
Bicester	A41 Access	25%	A41 (n) to Middleton Stoney Road to Howes Lane
		25%	A41 (n) to A41 Eastern Perimeter Road
		50%	A41 (n) to King's End Road
North	A41 Access	100%	A41 (n) to A41 Eastern Perimeter Road
East	A41 Access	100%	A41 (n) to A41 Eastern Perimeter Road
South (M40)	A41 Access	100%	A41 (s) to M40 Junction 9
South (A34)	A41 Access	100%	A41 (s) to M40 Junction 9
West	A41 Access	100%	A41 (s) to Proposed Perimeter Road to B4030

1.5.3 The resultant assignment of peak hour vehicular trips is illustrated on Figures 24 and 25 of the Transport Assessment report. It is important to note that the development trips have been factored by 2.5% in order to convert the flows to PCUs.



WSP

TITLE:

DISTRIBUTION ZONES

FIGURE No:

1

N:\South West Bicester\DRAWINGS\Corel\TA Figures\1546-Fig-Site Location.cdr

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : B - BUSINESS PARK

Selected regions and areas:

02	**SOUTH EAST**		
	BU	BUCKINGHAMSHIRE	1 days
	OX	OXFORDSHIRE	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
06	**WEST MIDLANDS**		
	ST	STAFFORDSHIRE	1 days
08	**NORTH WEST**		
	GM	GREATER MANCHESTER	1 days
	LC	LANCASHIRE	1 days

Main parameter selection:

Parameter: Gross floor area
Range: 2120 to 118448 (units: sqm)

Date Range: 01/01/96 to 08/07/04

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	3 days
Friday	1 days

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

Optional parameter selection:

Use Class:

B1	6 days

Location:

Suburban Area	1 days
Edge of Town	1 days
Commercial Zone	2 days
Industrial Zone	1 days
Development Zone	1 days

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	2 days
25,001 to 50,000	2 days

Optional parameter selection (Cont.):

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	3 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	3 days

Buses/Trains per day (both directions):

Frequency	*Per Hour*	*Per Day*	*Surveys*
Not Known			0 days
0	0	0	0 days
<20 per day	1	20	0 days
20-39 per day	2	40	0 days
40-59 per day	3	60	1 days
60-79 per day	4	80	0 days
80+ per day	> 4	> 80	5 days

LIST OF SITES relevant to selection parameters

1 **BU-02-B-01** **BUSINESS PARK, HIGH WYCOMBE** **BUCKINGHAMSHIRE**
LONDON ROAD

HIGH WYCOMBE
Total Gross floor area: 13300 sqm
Survey date: THURSDAY *08/07/04* *Survey Type: MANUAL*

13300 Sqm
591 Parking Spaces
22.5 per Sqm

2 **CA-02-B-01** **CAMBRIDGE SCIENCE PARK** **CAMBRIDGESHIRE**
MILTON ROAD

CAMBRIDGE
Total Gross floor area: 118448 sqm
Survey date: MONDAY *27/11/00* *Survey Type: MANUAL*

118448 Sqm
3685 Parking Spaces
32.1 per Sqm

3 **GM-02-B-03** **BUSINESS PARK, SALE** **GREATER MANCHESTER**
CROSS STREET

SALE
Total Gross floor area: 3985 sqm
Survey date: FRIDAY *28/05/04* *Survey Type: MANUAL*

3985 Sqm
165 Parking Spaces
24.2 per Sqm

4 **LC-02-B-02** **NAVIGATION BUSINESS VILLAGE** **LANCASHIRE**
NAVIGATION WAY
PRESTON DOCKLANDS DEVELOPMENT
PRESTON
Total Gross floor area: 3450 sqm
Survey date: THURSDAY *14/03/96* *Survey Type: MANUAL*

3450 Sqm
126 Parking Spaces
27.4 per Sqm

5 **OX-02-B-01** **BUSINESS PARK, OXFORD** **OXFORDSHIRE**
GARSINGTON ROAD
COWLEY
OXFORD
Total Gross floor area: 33105 sqm
Survey date: TUESDAY *21/10/03* *Survey Type: MANUAL*

33105 Sqm
1750 Parking Spaces
18.9 per Sqm

6 **ST-02-B-03** **BUSINESS PARK, STAFFORD** **STAFFORDSHIRE**
FRANK FOLEY WAY
GREYFRIARS
STAFFORD
Total Gross floor area: 4064 sqm
Survey date: THURSDAY *06/07/00* *Survey Type: MANUAL*

4064 Sqm
111 Parking Spaces
36.6 per Sqm

Average

$$= \frac{(22.5 + 32.1 + 24.2 + 27.4 + 18.9 + 36.6)}{6}$$

$$= \frac{161.7}{6}$$

$$= 26.95$$

Average = 27 spaces per Sqm.

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	0	0	0.00	0	0	0.00	0	0	0.00
00:30 - 01:00	0	0	0.00	0	0	0.00	0	0	0.00
01:00 - 01:30	0	0	0.00	0	0	0.00	0	0	0.00
01:30 - 02:00	0	0	0.00	0	0	0.00	0	0	0.00
02:00 - 02:30	0	0	0.00	0	0	0.00	0	0	0.00
02:30 - 03:00	0	0	0.00	0	0	0.00	0	0	0.00
03:00 - 03:30	0	0	0.00	0	0	0.00	0	0	0.00
03:30 - 04:00	0	0	0.00	0	0	0.00	0	0	0.00
04:00 - 04:30	0	0	0.00	0	0	0.00	0	0	0.00
04:30 - 05:00	0	0	0.00	0	0	0.00	0	0	0.00
05:00 - 05:30	0	0	0.00	0	0	0.00	0	0	0.00
05:30 - 06:00	0	0	0.00	0	0	0.00	0	0	0.00
06:00 - 06:30	0	0	0.00	0	0	0.00	0	0	0.00
06:30 - 07:00	0	0	0.00	0	0	0.00	0	0	0.00
07:00 - 07:30	6	29392	0.13	6	29392	0.03	6	29392	0.16
07:30 - 08:00	6	29392	0.41	6	29392	0.04	6	29392	0.45
08:00 - 08:30	6	29392	0.67	6	29392	0.05	6	29392	0.72
08:30 - 09:00	**6**	**29392**	**0.75**	6	29392	0.07	**6**	**29392**	**0.82**
09:00 - 09:30	6	29392	0.58	6	29392	0.08	6	29392	0.66
09:30 - 10:00	6	29392	0.37	6	29392	0.09	6	29392	0.46
10:00 - 10:30	6	29392	0.16	6	29392	0.07	6	29392	0.23
10:30 - 11:00	6	29392	0.13	6	29392	0.08	6	29392	0.21
11:00 - 11:30	6	29392	0.13	6	29392	0.08	6	29392	0.21
11:30 - 12:00	6	29392	0.10	6	29392	0.13	6	29392	0.23
12:00 - 12:30	6	29392	0.13	6	29392	0.31	6	29392	0.44
12:30 - 13:00	6	29392	0.23	6	29392	0.27	6	29392	0.50
13:00 - 13:30	6	29392	0.25	6	29392	0.25	6	29392	0.50
13:30 - 14:00	6	29392	0.28	6	29392	0.14	6	29392	0.42
14:00 - 14:30	6	29392	0.16	6	29392	0.16	6	29392	0.32
14:30 - 15:00	6	29392	0.12	6	29392	0.15	6	29392	0.27
15:00 - 15:30	6	29392	0.09	6	29392	0.15	6	29392	0.24
15:30 - 16:00	6	29392	0.07	6	29392	0.22	6	29392	0.29
16:00 - 16:30	6	29392	0.07	6	29392	0.32	6	29392	0.39
16:30 - 17:00	6	29392	0.06	6	29392	0.49	6	29392	0.55
17:00 - 17:30	6	29392	0.06	**6**	**29392**	**0.57**	6	29392	0.63
17:30 - 18:00	6	29392	0.06	6	29392	0.52	6	29392	0.58
18:00 - 18:30	6	29392	0.04	6	29392	0.35	6	29392	0.39
18:30 - 19:00	6	29392	0.03	6	29392	0.20	6	29392	0.23
19:00 - 19:30	0	0	0.00	0	0	0.00	0	0	0.00
19:30 - 20:00	0	0	0.00	0	0	0.00	0	0	0.00
20:00 - 20:30	0	0	0.00	0	0	0.00	0	0	0.00
20:30 - 21:00	0	0	0.00	0	0	0.00	0	0	0.00
21:00 - 21:30	0	0	0.00	0	0	0.00	0	0	0.00
21:30 - 22:00	0	0	0.00	0	0	0.00	0	0	0.00
22:00 - 22:30	0	0	0.00	0	0	0.00	0	0	0.00
22:30 - 23:00	0	0	0.00	0	0	0.00	0	0	0.00
23:00 - 23:30	0	0	0.00	0	0	0.00	0	0	0.00
23:30 - 24:00	0	0	0.00	0	0	0.00	0	0	0.00
Daily Trip Rates:			5.07			4.81			9.90

AM 0800-0900 IN 1.42 OUT 0.12 Total 1.54

PM 1700-1800 IN 0.12 OUT 1.09 Total 1.21

Parameter summary

Trip rate parameter range selected:	2120 - 118448 (units: sqm)
Survey date date range:	01/01/96 - 08/07/04
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

APPENDIX Z

Sensitivity Analysis - With Neighbouring 60,000sqm Employment Uses

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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TRL SOFTWARE BUREAU
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EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Bypass Roundabout\
BypassRbout- Total Traffic Inc Browne AM Peak.vai"
(drive-on-the-left) at 11:39:37 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

BypassRbout-Total Traffic Including Browne AM Peak

INPUT DATA

ARM A - A41 N
ARM B - Services
ARM C - A41 South
ARM D - Site

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.30	11.10	6.30	20.00	70.00	46.0	0.612	41.004
ARM B	3.50	10.50	14.20	20.00	70.00	45.0	0.507	29.756
ARM C	7.30	11.10	30.00	18.00	70.00	40.0	0.686	48.493
ARM D	3.50	6.90	17.80	20.00	70.00	46.0	0.477	26.758

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 08.00 AND ENDS 09.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.00 - 09.00					
	ARM A	0.000	0.029	0.970	0.001
		0.0	4.8	161.4	0.2
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.894	0.000	0.106	0.000
		14.4	0.0	1.7	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.888	0.008	0.000	0.104
		187.6	1.7	0.0	22.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.076	0.000	0.924	0.000
		2.5	0.0	30.3	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
08.00-08.15								
ARM A	27.73	37.78	0.734		0.0	2.7	37.9	
ARM B	2.68	13.68	0.196		0.0	0.2	3.5	
ARM C	35.22	46.84	0.752		0.0	3.0	41.9	
ARM D	5.47	10.64	0.514		0.0	1.0	14.4	

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)
08.15-08.30								
ARM A	27.73	37.74	0.735		2.7	2.7	40.8	
ARM B	2.68	13.56	0.198		0.2	0.2	3.7	
ARM C	35.22	46.83	0.752		3.0	3.0	44.8	
ARM D	5.47	10.55	0.519		1.0	1.1	15.7	

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)
08.30-08.45								
ARM A	27.73	37.74	0.735		2.7	2.7	41.1	
ARM B	2.68	13.55	0.198		0.2	0.2	3.7	
ARM C	35.22	46.82	0.752		3.0	3.0	45.1	
ARM D	5.47	10.55	0.519		1.1	1.1	15.9	

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)
08.45-09.00								
ARM A	27.73	37.74	0.735		2.7	2.8	41.2	
ARM B	2.68	13.55	0.198		0.2	0.2	3.7	
ARM C	35.22	46.82	0.752		3.0	3.0	45.2	
ARM D	5.47	10.55	0.519		1.1	1.1	16.0	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	2.7	***
08.30	2.7	***
08.45	2.7	***
09.00	2.8	***

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	3.0	***
08.30	3.0	***
08.45	3.0	***
09.00	3.0	***

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.15	1.0	*
08.30	1.1	*
08.45	1.1	*
09.00	1.1	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1663.8	1663.8	161.1	0.10	161.2	0.10
B	160.8	160.8	14.6	0.09	14.6	0.09
C	2113.2	2113.2	177.0	0.08	177.1	0.08
D	328.2	328.2	62.1	0.19	62.2	0.19
ALL	4266.0	4266.0	414.7	0.10	415.0	0.10

* 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 13:53:17 on 27/09/2006]

TRL LIMITED

CAPACITIES, QUEUES AND DELAYS AT ROUNDABOUTS

ARCADY 5.0 ANALYSIS PROGRAM
RELEASE 1.1 (MAY 2001)

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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk

Run with file:-
"n:\South West Bicester\ANALYSIS\ARCADY\September 2006\Bypass Roundabout\
BypassRbout- Total Traffic Inc Browne PM Peak.vai"
(drive-on-the-left) at 11:39:42 on Wednesday, 27 September 2006

ROUNDABOUT CAPACITY AND DELAY

RUN TITLE

BypassRbout-Total Traffic Including Browne PM Peak

INPUT DATA

ARM A - A41 N
ARM B - Services
ARM C - A41 South
ARM D - Site

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 ARM A	I	7.30	I	11.10	I	6.30	I	20.00	I	70.00	I	46.0	I	0.612	I	41.004
I ARM B	I	3.50	I	10.50	I	14.20	I	20.00	I	70.00	I	45.0	I	0.507	I	29.756
I ARM C	I	7.30	I	11.10	I	30.00	I	18.00	I	70.00	I	40.0	I	0.686	I	48.493
I ARM D	I	3.50	I	6.90	I	17.80	I	20.00	I	70.00	I	46.0	I	0.477	I	26.758

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

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 17.00 AND ENDS 18.00

LENGTH OF TIME PERIOD - 60 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE INPUT DIRECTLY.

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
17.00 - 18.00					
	ARM A	0.000	0.041	0.948	0.012
		0.0	6.6	154.3	1.9
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.963	0.000	0.037	0.000
		18.2	0.0	0.7	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.829	0.011	0.000	0.160
		175.8	2.3	0.0	34.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.009	0.000	0.991	0.000
		0.2	0.0	22.3	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

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)
17.00-17.15								
ARM A	27.13	38.52	0.704		0.0	2.3	33.2	
ARM B	3.15	14.78	0.213		0.0	0.3	3.9	
ARM C	35.35	46.21	0.765		0.0	3.2	44.6	
ARM D	3.75	11.23	0.334		0.0	0.5	7.1	

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)
17.15-17.30								
ARM A	27.13	38.50	0.705		2.3	2.4	35.3	
ARM B	3.15	14.69	0.214		0.3	0.3	4.1	
ARM C	35.35	46.19	0.765		3.2	3.2	48.0	
ARM D	3.75	11.14	0.337		0.5	0.5	7.5	

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)
17.30-17.45								
ARM A	27.13	38.50	0.705		2.4	2.4	35.5	
ARM B	3.15	14.69	0.214		0.3	0.3	4.1	
ARM C	35.35	46.19	0.765		3.2	3.2	48.4	
ARM D	3.75	11.14	0.337		0.5	0.5	7.6	

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)
17.45-18.00								
ARM A	27.13	38.50	0.705		2.4	2.4	35.6	
ARM B	3.15	14.69	0.214		0.3	0.3	4.1	
ARM C	35.35	46.19	0.765		3.2	3.2	48.5	
ARM D	3.75	11.14	0.337		0.5	0.5	7.6	

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	2.3	**
17.30	2.4	**
17.45	2.4	**
18.00	2.4	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.3
17.30	0.3
17.45	0.3
18.00	0.3

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	3.2	***
17.30	3.2	***
17.45	3.2	***
18.00	3.2	***

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.5	
17.30	0.5	*
17.45	0.5	*
18.00	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1627.8	1627.8	139.6	0.09	139.7	0.09
B	189.0	189.0	16.1	0.09	16.1	0.09
C	2121.0	2121.0	189.5	0.09	189.7	0.09
D	225.0	225.0	29.7	0.13	29.8	0.13
ALL	4162.8	4162.8	375.0	0.09	375.2	0.09

* 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.

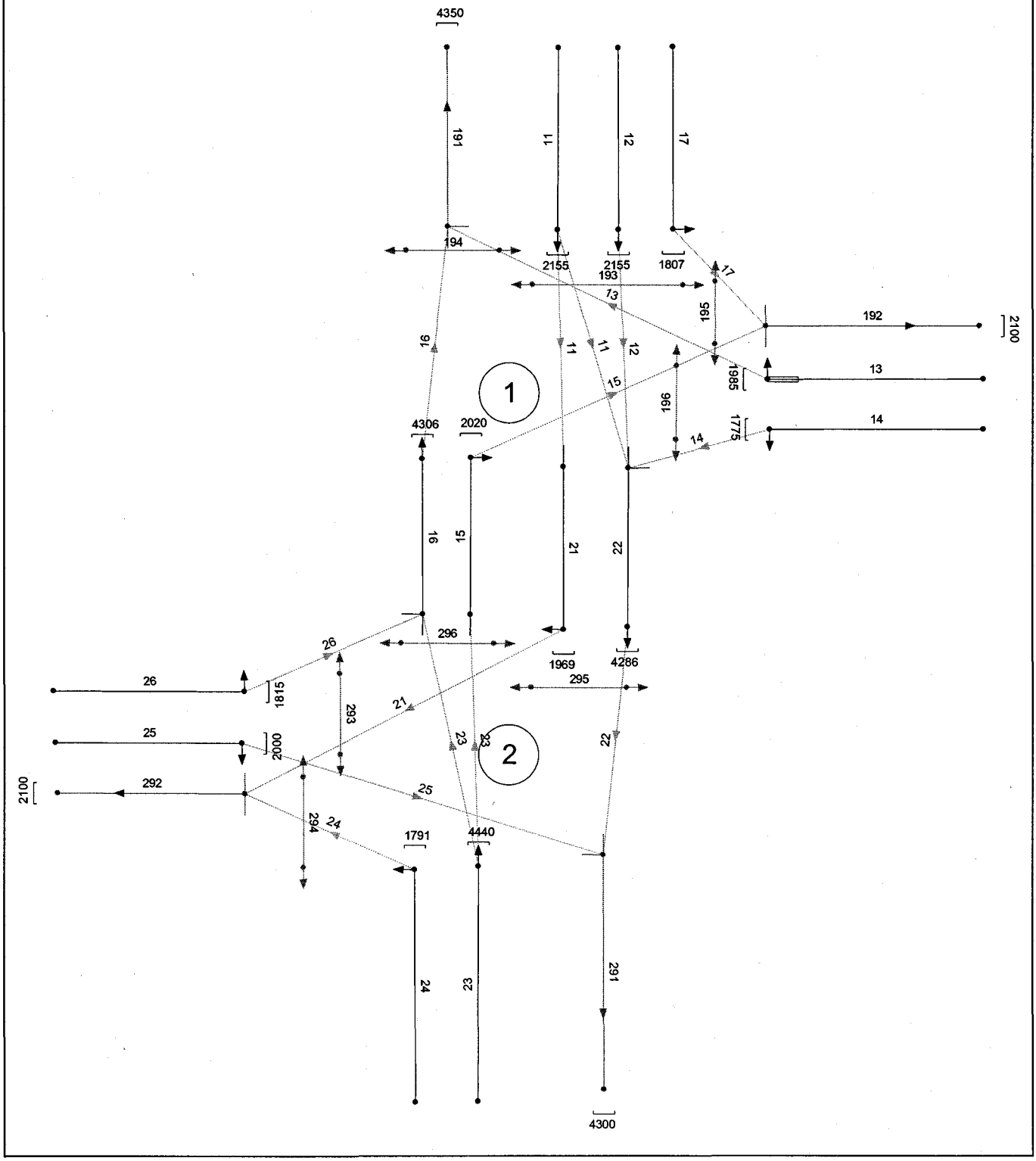
========== end of file ==========

[Printed at 13:53:42 on 27/09/2006]

2014 PM Peak Base + Whiteland Fm + Browne - Option A (NG)

Network Diagram

2014 PM Peak Whitelands + Browne



PRT File
2014 PM Peak Whitelands + Browne

1 _____ T R A N S Y T 12 _____

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)
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RG45 6AU, UK. — Web: www.trlsoftware.co.uk

Run with file:- "SITE - BROWNE ACCESS STAGGER - OPTION A ALL BROWNE TRAFFIC ONE ACCESS (NG).DAT" at 10:30 on 27/09/06

TRANSYT 12.0

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	= 2
NUMBER OF LINKS	= 25
NUMBER OF OPTIMISED NODES	= 2
MAXIMUM NUMBER OF GRAPHIC PLOTS	= 0
NUMBER OF STEPS IN CYCLE	= 90
MAXIMUM NUMBER OF SHARED STOPLINES	= 0
MAXIMUM NUMBER OF TIMING POINTS	= 5
MAXIMUM LINKS AT ANY NODE	= 11

CORE REQUESTED = 8835 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

(1)= TITLE:-

CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	END (SEC)	EQUISAT 0=UNEQUAL SETTINGS 0=NO 1=YES	FLOW CYCLE 1=EQUAL CYCLE	SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H	STOP VALUE P PER 100
2)=	1	90	90	60	2	3	0	1	100	100	1	1	0	0	1420	260

CARD NO.	CARD TYPE	LIST OF NODES TO BE OPTIMISED									
3)=	2	2	1	0	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
4)=	10	1	0	7	5	7						
5)=	10	2	7	7	5							

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
6)=	11	1	9	5	11	11						
7)=	11	2	0	9	12	7	5					

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	12	1	1	0	43	55	72						
9)=	12	2	1	86	39	55	72	79					

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100	DISPSN X100
10)=	31	11	1	4	7	2	0	0	0	0	0	200	0	2155	0	0
11)=	31	12	1	4	7	2	0	0	0	0	0	200	0	2155	0	0
12)=	31	13	1	3	5	4	0	0	0	0	0	200	0	1985	0	0
13)=	31	14	1	3	5	4	0	0	0	0	0	200	0	1775	0	0
14)=	31	15	1	2	5	3	0	0	0	0	0	166	0	2020	0	0
15)=	31	16	1	1	9	3	0	0	0	0	0	166	0	4306	0	0
16)=	31	17	1	4	7	2	0	0	0	0	0	200	0	1807	0	0
17)=	31	21	2	2	5	3	0	0	0	0	0	173	0	1969	0	0
18)=	31	22	2	1	0	3	0	0	0	0	0	173	0	4286	0	0
19)=	31	23	2	5	5	2	0	0	0	0	0	200	0	4440	0	0
20)=	31	24	2	4	7	2	0	0	0	0	0	200	0	1791	0	0
21)=	31	25	2	3	10	5	0	0	0	0	0	200	0	2000	0	0
22)=	31	26	2	3	10	5	0	0	0	0	0	200	0	1815	0	0
23)=	31	191	0	0	0	0	0	0	0	0	0	200	0	4350	0	0
24)=	31	192	0	0	0	0	0	0	0	0	0	200	0	2100	0	0
25)=	31	193	1	2	5	3	0	0	0	0	0	10	0	10000	0	0
26)=	31	194	1	4	11	1	0	0	0	0	0	10	0	10000	0	0
27)=	31	195	1	3	11	4	0	0	0	0	0	10	0	10000	0	0
28)=	31	196	1	1	0	2	0	0	0	0	0	10	0	10000	0	0
29)=	31	291	0	0	0	0	0	0	0	0	0	200	0	4300	0	0
30)=	31	292	0	0	0	0	0	0	0	0	0	200	0	2100	0	0
31)=	31	293	2	1	0	2	0	0	0	0	0	10	0	10000	0	0
32)=	31	294	2	3	12	4	0	0	0	0	0	10	0	10000	0	0
33)=	31	295	2	3	5	4	0	0	0	0	0	10	0	10000	0	0
34)=	31	296	2	2	9	3	0	0	0	0	0	10	0	10000	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 LINK NO.	ENTRY 1 FLOW	ENTRY 1 CRUISE SPEED	ENTRY 2 LINK NO.	ENTRY 2 FLOW	ENTRY 2 CRUISE SPEED	ENTRY 3 LINK NO.	ENTRY 3 FLOW	ENTRY 3 CRUISE SPEED	ENTRY 4 LINK NO.	ENTRY 4 FLOW	ENTRY 4 CRUISE SPEED
35)=	32	11	787	0	0	0	32	0	0	0	0	0	0	0	0	0
36)=	32	12	656	0	0	0	32	0	0	0	0	0	0	0	0	0
37)=	32	13	263	0	0	0	32	0	0	0	0	0	0	0	0	0
38)=	32	14	171	0	0	0	32	0	0	0	0	0	0	0	0	0

```
39)=  32    15     15     0    23     15     32     0     0     0     0     0     0     0     0     0
40)=  32    16   1878     0    23   1765     32    26   110    32     0     0     0     0     0     0
41)=  32    17     23     0     0      0     32     0     0     0     0     0     0     0     0     0
42)=  32    21    131     0    11    131     32     0     0     0     0     0     0     0     0     0
43)=  32    22   1473     0    11    656     32    12   656    32    14   171    32     0     0     0
44)=  32    23   1765     0     0      0     32     0     0     0     0     0     0     0     0     0
45)=  32    24    176     0     0      0     32     0     0     0     0     0     0     0     0     0
46)=  32    25    131     0     0      0     32     0     0     0     0     0     0     0     0     0
47)=  32    26    110     0     0      0     32     0     0     0     0     0     0     0     0     0
48)=  32   191   2141     0    13    263     32    16  1878    32     0     0     0     0     0     0
49)=  32   192     38     0    15     15     32    17    23    32     0     0     0     0     0     0
50)=  32   193     10     0     0      0      5     0     0     0     0     0     0     0     0     0
51)=  32   194     10     0     0      0      5     0     0     0     0     0     0     0     0     0
52)=  32   195     10     0     0      0      5     0     0     0     0     0     0     0     0     0
53)=  32   196     10     0     0      0      5     0     0     0     0     0     0     0     0     0
54)=  32   291   1604     0    22   1473     32    25   131    32     0     0     0     0     0     0
55)=  32   292    279     0    21    131     32    24   176    32     0     0     0     0     0     0
56)=  32   293     10     0     0      0      5     0     0     0     0     0     0     0     0     0
57)=  32   294     10     0     0      0      5     0     0     0     0     0     0     0     0     0
58)=  32   295     10     0     0      0      5     0     0     0     0     0     0     0     0     0
59)=  32   296     10     0     0      0      5     0     0     0     0     0     0     0     0     0

                    LINK CARDS : FLARE SATURATION FLOW DATA
                      ..LANE  1..     ..LANE  2..     ..LANE  3..
      CARD   LINK   SAT.    CAPAC  SAT.    CAPAC  SAT.    CAPAC
      TYPE   NO.   FLOW     VEH.  FLOW     VEH.  FLOW     VEH.
60)=  33     13    2120      2     0       0     0       0

*****END OF SUBROUTINE TINPUT*****

     90 SECOND CYCLE  90 STEPS

INITIAL SETTINGS
 - (SECONDS)

  NODE   NUMBER   STAGE   STAGE   STAGE   STAGE   STAGE   STAGE   STAGE   STAGE   STAGE   STAGE
   NO   OF STAGES   1       2       3       4       5       6       7       8       9      10

    1       4       0      43      55      72
    2       5      86      39      55      72      79

 LINK    FLOW    SAT   DEGREE   MEAN TIMES  -------DELAY--------   ----STOPS----   ----QUEUE----  PERFORMANCE   EXIT   GREEN TIMES
NUMBER   INTO    FLOW     OF      PER PCU    UNIFORM RANDOM+ COST    MEAN   COST    MEAN            INDEX.       NODE   START  START
         LINK            SAT     CRUISE              OVERSAT  OF    STOPS   OF     MAX.  AVERAGE  WEIGHTED SUM          END    END
                          DELAY  (U+R+O=MEAN Q) DELAY   /PCU   STOPS          EXCESS  OF ( ) VALUES          1ST    2ND
        (PCU/H) (PCU/H)  (%)  (SEC) (SEC)   (PCU-H/H)  ($/H)   (%)   ($/H)   (PCU)  (PCU)   ($/H)                (SECONDS)

   11     787    2155     60  23.0  14.6    2.3 +  0.7  ( 43.8)   60  (  6.7)    13             50.5    1     79  43
   12     656    2155     50  23.0  13.0    1.8 +  0.5  ( 32.4)   54  (  5.1)    10             37.4    1     79  43
   13     263    2538f    72  23.0  53.0    2.6 +  1.2  ( 54.5)  108  (  4.1)     7             58.5    1     60  72
   14     171    1775     67  23.0  57.6    1.7 +  1.0  ( 38.5)  113  (  2.8)     5             41.2    1     60  72
   15      14    2020      8  19.2  32.1    0.1 +  0.0  (  1.7)   92  (  0.2)     0              1.9    1     48  55
   16    1879    4306     84  19.2   8.2    1.5 +  2.5  ( 57.0)   22  (  5.8)    15             62.8    1      9  55
   17      23    1807      2  23.0   9.2    0.0 +  0.0  (  0.8)   38  (  0.1)     0              0.9    1     79  43
   21     131    1969     50  20.0  39.5    0.9 +  0.5  ( 20.1)  103  (  1.9)     4             22.1    2     44  55
   22    1474    4286     52  20.0   4.6    1.1 +  0.5  ( 23.7)   18  (  3.8)     7             27.5    2     86  55
   23    1765    4440     78  23.0  21.9    8.8 +  1.7  (149.0)   80  ( 20.0)    37            169.0    2     84  39
   24     176    1791     17  23.0  12.0    0.5 +  0.1  (  8.0)   47  (  1.2)     2              9.2    2     79  39
   25     131    2000     39  23.0  42.8    1.2 +  0.3  ( 21.9)   95  (  1.8)     3             23.7    2     65  79
   26     110    1815     36  23.0  43.1    1.0 +  0.3  ( 18.5)   95  (  1.5)     3             20.0    2     65  79
  191    2142    4350     49  23.0   1.3    0.0 +  0.5  (  6.9)    1  (  0.3)     0              7.2
  192      37    2100      2  23.0   1.4    0.0 +  0.0  (  0.1)    1  (  0.0)     0              0.1
  193      10   10000      1   7.7  40.4    0.1 +  0.0  (  1.6)   93  (  0.0)     0              1.6    1     48  55
  194      10   10000      1   7.7  40.4    0.1 +  0.0  (  1.6)   93  (  0.0)     0              1.6    1     83   0
  195      10   10000      1   7.7  41.6    0.1 +  0.0  (  1.6)   95  (  0.0)     0              1.6    1     66  72
  196      10   10000      0   7.7  12.9    0.0 +  0.0  (  0.5)   51  (  0.0)     0              0.5    1      0  43
  291    1605    4300     37  23.0   1.2    0.0 +  0.3  (  4.2)    1  (  0.2)     0              4.4
  292     278    2100     13  23.0   1.5    0.0 +  0.1  (  1.1)    1  (  0.0)     0              1.1
  293      10   10000      0   7.7  12.9    0.0 +  0.0  (  0.5)   51  (  0.0)     0              0.5    2     86  39
  294      10   10000      2   7.7  42.9    0.1 +  0.0  (  1.7)   96  (  0.0)     0              1.7    2     67  72
  295      10   10000      1   7.7  35.1    0.1 +  0.0  (  1.4)   87  (  0.0)     0              1.4    2     60  72
  296      10   10000      1   7.7  40.4    0.1 +  0.0  (  1.6)   93  (  0.0)     0              1.6    2     48  55
           *** f - average saturation flow for flared link ***

  TOTAL          TOTAL          MEAN          TOTAL     TOTAL     TOTAL          TOTAL          PENALTY        TOTAL
 DISTANCE         TIME         JOURNEY       UNIFORM    RANDOM+    COST           COST           FOR         PERFORMANCE
TRAVELLED        SPENT         SPEED         DELAY      OVERSAT    OF             OF           EXCESS         INDEX
                                                        DELAY     DELAY          STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)      (KM/H)      (PCU-H/H) (PCU-H/H)  ($/H)          ($/H)          ($/H)          ($/H)

   2221.3         104.2         21.3         24.3      10.4    ( 492.5) + (   55.5)  +  (   0.0)   =     548.0      TOTALS

**********************************************************************************************************************************
                                    CRUISE              DELAY              STOPS              TOTALS
                                 LITRES PER HOUR    LITRES PER HOUR    LITRES PER HOUR    LITRES PER HOUR

FUEL CONSUMPTION PREDICTIONS        136.6         +       39.9         +       25.3         =     201.8

NO. OF ENTRIES TO SUBPT  =    1
NO. OF LINKS RECALCULATED=   25

     90 SECOND CYCLE  90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   13
 - (SECONDS)

    1       4       0      43      55      72
    2       5      86      39      55      72      79

  TOTAL          TOTAL          MEAN          TOTAL     TOTAL     TOTAL          TOTAL          PENALTY        TOTAL
 DISTANCE         TIME         JOURNEY       UNIFORM    RANDOM+    COST           COST           FOR         PERFORMANCE
TRAVELLED        SPENT         SPEED         DELAY      OVERSAT    OF             OF           EXCESS         INDEX
                                                        DELAY     DELAY          STOPS         QUEUES
(PCU-KM/H)     (PCU-H/H)      (KM/H)      (PCU-H/H) (PCU-H/H)  ($/H)          ($/H)          ($/H)          ($/H)

   2221.3         104.2         21.3         24.3      10.4    ( 492.5) + (   55.5)  +  (   0.0)   =     548.0      TOTALS

NO. OF ENTRIES TO SUBPT  =    5
NO. OF LINKS RECALCULATED=   94

     90 SECOND CYCLE  90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :-   13  36
 - (SECONDS)

    1       4       0      43      55      72
    2       5      86      39      55      72      79

  TOTAL          TOTAL          MEAN          TOTAL     TOTAL     TOTAL          TOTAL          PENALTY        TOTAL
 DISTANCE         TIME         JOURNEY       UNIFORM    RANDOM+    COST           COST           FOR         PERFORMANCE
```

TRAVELLED (PCU-KM/H)	SPENT (PCU-H/H)	SPEED (KM/H)	DELAY (PCU-H/H)	OVERSAT DELAY (PCU-H/H)	OF DELAY ($/H)	OF STOPS ($/H)	EXCESS QUEUES ($/H)	INDEX ($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5) +	(55.5) +	(0.0) =	548.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 95

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13
- (SECONDS)

1 4 0 43 55 72
2 5 86 39 55 72 79

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5) +	(55.5) +	(0.0) =	548.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 97

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36
- (SECONDS)

1 4 0 43 55 72
2 5 86 39 55 72 79

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5) +	(55.5) +	(0.0) =	548.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF *LINKS* RECALCULATED= 97

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36 13
- (SECONDS)

1 4 0 43 55 72
2 5 86 39 55 72 79

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5) +	(55.5) +	(0.0) =	548.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36 13 1
- (SECONDS)

1 4 0 43 55 72
2 5 86 39 55 72 79

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5) +	(55.5) +	(0.0) =	548.0	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 13 36 13 36 13 1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	4	0	43	55	72						
2	5	86	39	55	72	79					

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN TIMES START 1ST (SECONDS)	GREEN TIMES START END 2ND
11	787	2155	60	23.0	14.6	2.3 +	0.7	(43.8)	60	(6.7)	13		50.5	1	79	43
12	656	2155	50	23.0	13.0	1.8 +	0.5	(32.4)	54	(5.1)	10		37.4	1	79	43
13	263	2538f	72	23.0	53.0	2.6 +	1.2	(54.5)	108	(4.1)	7		58.5	1	60	72
14	171	1775	67	23.0	57.6	1.7 +	1.0	(38.5)	113	(2.8)	5		41.2	1	60	72
15	14	2020	8	19.2	32.1	0.1 +	0.0	(1.7)	92	(0.2)	0		1.9	1	48	55
16	1879	4306	84	19.2	8.2	1.5 +	2.5	(57.0)	22	(5.8)	15		62.8	1	9	55
17	23	1807	2	23.0	9.2	0.0 +	0.0	(0.8)	38	(0.1)	0		0.9	1	79	43
21	131	1969	50	20.0	39.5	0.9 +	0.5	(20.1)	103	(1.9)	4		22.1	2	44	55
22	1474	4286	52	20.0	4.6	1.1 +	0.5	(23.7)	18	(3.8)	7		27.5	2	86	55
23	1765	4440	78	23.0	21.9	8.8 +	1.7	(149.0)	80	(20.0)	37		169.0	2	84	39
24	176	1791	17	23.0	12.0	0.5 +	0.1	(8.0)	47	(1.2)	2		9.2	2	79	39
25	131	2000	39	23.0	42.8	1.2 +	0.3	(21.9)	95	(1.8)	3		23.7	2	65	79
26	110	1815	36	23.0	43.1	1.0 +	0.3	(18.5)	95	(1.5)	3		20.0	2	65	79
191	2142	4350	49	23.0	1.3	0.0 +	0.5	(6.9)	1	(0.3)	0		7.2			
192	37	2100	2	23.0	1.4	0.0 +	0.0	(0.1)	1	(0.0)	0		0.1			
193	10	10000	1	7.7	40.4	0.1 +	0.0	(1.6)	93	(0.0)	0		1.6	1	48	55

194	10	10000	1	7.7	40.4	0.1	+	0.0	(1.6)	93	(0.0)	0		1.6	1	83 0
195	10	10000	1	7.7	41.6	0.1	+	0.0	(1.6)	95	(0.0)	0		1.6	1	66 72
196	10	10000	0	7.7	12.9	0.0	+	0.0	(0.5)	51	(0.0)	0		0.5	1	0 43
291	1605	4300	37	23.0	1.2	0.0	+	0.3	(4.2)	1	(0.2)	0		4.4		
292	278	2100	13	23.0	1.5	0.0	+	0.1	(1.1)	1	(0.0)	0		1.1		
293	10	10000	0	7.7	12.9	0.0	+	0.0	(0.5)	51	(0.0)	0		0.5	2	86 39
294	10	10000	2	7.7	42.9	0.1	+	0.0	(1.7)	96	(0.0)	0		1.7	2	67 72
295	10	10000	1	7.7	35.1	0.1	+	0.0	(1.4)	87	(0.0)	0		1.4	2	60 72
296	10	10000	1	7.7	40.4	0.1	+	0.0	(1.6)	93	(0.0)	0		1.6	2	48 55

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED	TOTAL TIME SPENT	MEAN JOURNEY SPEED	TOTAL UNIFORM DELAY	TOTAL RANDOM+ OVERSAT DELAY	TOTAL COST OF DELAY		TOTAL COST OF STOPS		PENALTY FOR EXCESS QUEUES		TOTAL PERFORMANCE INDEX	
(PCU-KM/H)	(PCU-H/H)	(KM/H)	(PCU-H/H)	(PCU-H/H)	($/H)		($/H)		($/H)		($/H)	
2221.3	104.2	21.3	24.3	10.4	(492.5)	+	(55.5)	+	(0.0)	=	548.0	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	136.6	+	39.9	+	25.3	=	201.8

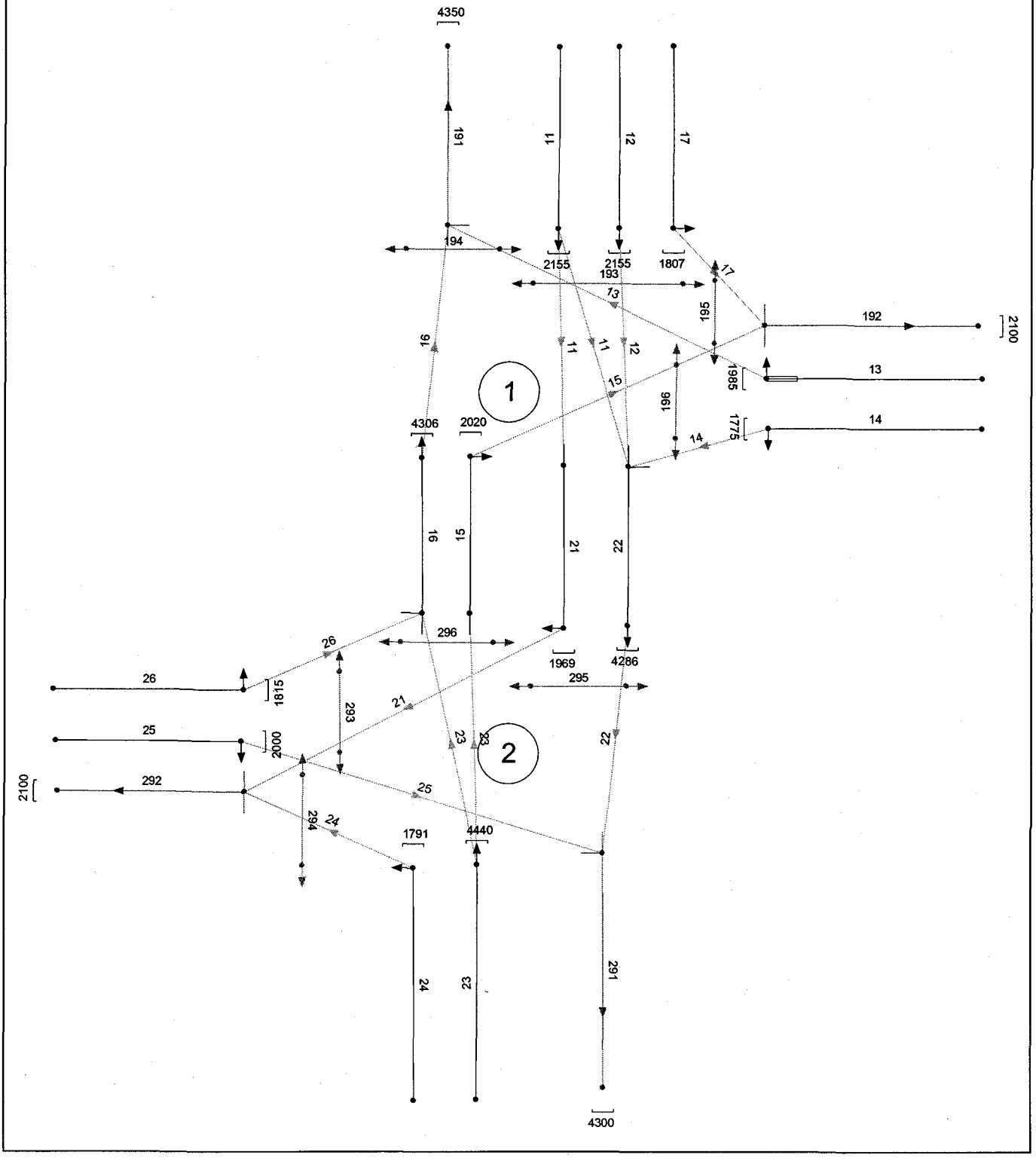
NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

PROGRAM TRANSYT FINISHED

2014 AM Peak Base + Whiteland Fm + Browne - Option A (NG)

Network Diagram

2014 AM Peak Whitelands + Browne



PRT File
2014 AM Peak Whitelands + Browne

1 ——————— T R A N S Y T 12 ———————

Traffic Network Study Tool

Analysis Program Release 3 (March 2004)
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Run with file:- "SITE - BROWNE ACCESS STAGGER - OPTION A ALL BROWNE TRAFFIC ONE ACCESS (NG).DAT" at 10:17 on 27/09/06

TRANSYT 12.0

PARAMETERS CONTROLLING DIMENSIONS OF PROBLEM :

NUMBER OF NODES	= 2
NUMBER OF LINKS	= 25
NUMBER OF OPTIMISED NODES	= 2
MAXIMUM NUMBER OF GRAPHIC PLOTS	= 0
NUMBER OF STEPS IN CYCLE	= 90
MAXIMUM NUMBER OF SHARED STOPLINES	= 0
MAXIMUM NUMBER OF TIMING POINTS	= 6
MAXIMUM LINKS AT ANY NODE	= 11

CORE REQUESTED = 8862 WORDS
CORE AVAILABLE = 72000 WORDS

DATA INPUT :-

CARD NO.	CARD TYPE														
(1)=	TITLE:-														
CARD NO.	CARD TYPE	CYCLE TIME (SEC)	NO. OF STEPS PER CYCLE	TIME PERIOD 1-1200 MINS.	EFFECTIVE-GREEN DISPLACEMENTS START (SEC)	EFFECTIVE-GREEN DISPLACEMENTS END (SEC)	EQUISAT SETTINGS 0=NO 1=YES	0=UNEQUAL CYCLE 1=EQUAL CYCLE	FLOW SCALE 10-200 %	CRUISE-SPEEDS SCALE 50-200 %	CARD32 0=TIMES 1=SPEEDS	OPTIMISE 0=NONE 1=O/SET 2=FULL	EXTRA COPIES FINAL OUTPUT	HILL-CLIMB OUTPUT 1=FULL	DELAY VALUE P PER PCU-H	STOP VALUE P PER 100
2)=	1	90	90	60	2	3	0	1	100	100	1	1	0	0	1420	260
CARD NO.	CARD TYPE	LIST OF NODES TO BE OPTIMISED														
3)=	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0

NODE CARDS: MINIMUM STAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
4)=	10	1	7	7	0	5	7					
5)=	10	2	7	7	5							

NODE CARDS: PRECEDING INTERSTAGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
6)=	11	1	0	5	0	11	11					
7)=	11	2	0	9	12	7	5					

NODE CARDS: STAGE CHANGE TIMES (WORKING)

CARD NO.	CARD TYPE	NODE NO.	Sgl/Dbl Cycled	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
8)=	12	1	1	43	77	3	5	21	39				
9)=	12	2	1	32	77	3	20	27					

LINK CARDS: FIXED DATA

CARD NO.	CARD TYPE	LINK NO.	EXIT NODE	FIRST GREEN START STAGE	FIRST GREEN START LAG	FIRST GREEN END STAGE	FIRST GREEN END LAG	SECOND GREEN START STAGE	SECOND GREEN START LAG	SECOND GREEN END STAGE	SECOND GREEN END LAG	LINK LENGTH	STOP WT.X100	SAT FLOW	DELAY WT.X100	DISPSN X100
10)=	31	11	1	5	7	2	0	0	0	0	0	200	0	2155	0	0
11)=	31	12	1	5	7	2	0	0	0	0	0	200	0	2155	0	0
12)=	31	13	1	4	5	5	0	0	0	0	0	200	0	1985	0	0
13)=	31	14	1	4	5	5	0	0	0	0	0	200	0	1775	0	0
14)=	31	15	1	2	5	4	0	0	0	0	0	166	0	2020	0	0
15)=	31	16	1	1	0	4	0	0	0	0	0	166	0	4306	0	0
16)=	31	17	1	5	7	2	0	0	0	0	0	200	0	1807	0	0
17)=	31	21	2	2	5	3	0	0	0	0	0	173	0	1969	0	0
18)=	31	22	2	1	0	3	0	0	0	0	0	173	0	4286	0	0
19)=	31	23	2	5	5	2	0	0	0	0	0	200	0	4440	0	0
20)=	31	24	2	4	7	2	0	0	0	0	0	200	0	1791	0	0
21)=	31	25	2	3	10	5	0	0	0	0	0	200	0	2000	0	0
22)=	31	26	2	3	10	5	0	0	0	0	0	200	0	1815	0	0
23)=	31	191	0	0	0	0	0	0	0	0	0	200	0	4350	0	0
24)=	31	192	0	0	0	0	0	0	0	0	0	200	0	2100	0	0
25)=	31	193	1	2	5	3	0	0	0	0	0	10	0	10000	0	0
26)=	31	194	1	5	11	6	0	0	0	0	0	10	0	10000	0	0
27)=	31	195	1	4	11	5	0	0	0	0	0	10	0	10000	0	0
28)=	31	196	1	1	0	2	0	0	0	0	0	10	0	10000	0	0
29)=	31	291	0	0	0	0	0	0	0	0	0	200	0	4300	0	0
30)=	31	292	0	0	0	0	0	0	0	0	0	200	0	2100	0	0
31)=	31	293	2	1	0	2	0	0	0	0	0	10	0	10000	0	0
32)=	31	294	2	3	12	4	0	0	0	0	0	10	0	10000	0	0
33)=	31	295	2	3	5	4	0	0	0	0	0	10	0	10000	0	0
34)=	31	296	2	2	9	3	0	0	0	0	0	10	0	10000	0	0

LINK CARDS: FLOW DATA

CARD NO.	CARD TYPE	LINK NO.	TOTAL FLOW	UNIFORM FLOW	ENTRY 1 LINK NO.	ENTRY 1 FLOW	ENTRY 1 CRUISE SPEED	ENTRY 2 LINK NO.	ENTRY 2 FLOW	ENTRY 2 CRUISE SPEED	ENTRY 3 LINK NO.	ENTRY 3 FLOW	ENTRY 3 CRUISE SPEED	ENTRY 4 LINK NO.	ENTRY 4 FLOW	ENTRY 4 CRUISE SPEED
35)=	32	11	891	0	0	0	32	0	0	0	0	0	0	0	0	0
36)=	32	12	738	0	0	0	32	0	0	0	0	0	0	0	0	0
37)=	32	13	27	0	0	0	32	0	0	0	0	0	0	0	0	0
38)=	32	14	18	0	0	0	32	0	0	0	0	0	0	0	0	0

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39)=  32    15    228     0    23    228    32     0     0     0     0     0     0     0     0     0
40)=  32    16   1760     0    23   1634    32    26   126    32     0     0     0     0     0     0
41)=  32    17    349     0     0      0    32     0     0     0     0     0     0     0     0     0
42)=  32    21    153     0    11    153    32     0     0     0     0     0     0     0     0     0
43)=  32    22   1495     0    11    738    32    12   738    32    14    18    32     0     0     0
44)=  32    23   1862     0     0      0    32     0     0     0     0     0     0     0     0     0
45)=  32    24    183     0     0      0    32     0     0     0     0     0     0     0     0     0
46)=  32    25    170     0     0      0    32     0     0     0     0     0     0     0     0     0
47)=  32    26    126     0     0      0    32     0     0     0     0     0     0     0     0     0
48)=  32   191   1787     0    13     27    32    16  1760    32     0     0     0     0     0     0
49)=  32   192    577     0    15    228    32    17   349    32     0     0     0     0     0     0
50)=  32   193     10     0     0      0     5     0     0     0     0     0     0     0     0     0
51)=  32   194     10     0     0      0     5     0     0     0     0     0     0     0     0     0
52)=  32   195     10     0     0      0     5     0     0     0     0     0     0     0     0     0
53)=  32   196     10     0     0      0     5     0     0     0     0     0     0     0     0     0
54)=  32   291   1665     0    22   1495    32    25   170    32     0     0     0     0     0     0
55)=  32   292    336     0    21    153    32    24   183    32     0     0     0     0     0     0
56)=  32   293     10     0     0      0     5     0     0     0     0     0     0     0     0     0
57)=  32   294     10     0     0      0     5     0     0     0     0     0     0     0     0     0
58)=  32   295     10     0     0      0     5     0     0     0     0     0     0     0     0     0
59)=  32   296     10     0     0      0     5     0     0     0     0     0     0     0     0     0
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LINK CARDS : FLARE SATURATION FLOW DATA

```
                    ..LANE  1..      ..LANE  2..      ..LANE  3..
      CARD   LINK   SAT.     CAPAC   SAT.     CAPAC   SAT.     CAPAC
      TYPE    NO.   FLOW     VEH.    FLOW     VEH.    FLOW     VEH.
60)=  33      13    2120     2       0        0       0        0
```

*****END OF SUBROUTINE TINPUT*****

90 SECOND CYCLE 90 STEPS

INITIAL SETTINGS
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	6	43	77	3	5	21	39				
2	5	32	77	3	20	27					

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	DELAY RANDOM+ OVERSAT (PCU-H/H)	DELAY COST OF DELAY ($/H)	STOPS MEAN STOPS /PCU (%)	STOPS COST OF STOPS ($/H)	QUEUE MEAN MAX. (PCU)	QUEUE AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN TIMES START 1ST (SECONDS)	GREEN TIMES END 1ST (SECONDS)	GREEN TIMES START 2ND (SECONDS)	GREEN TIMES END 2ND (SECONDS)
11	891	2155	74	23.0	21.5	3.8 +	1.4	(73.7)	77	(9.7)	18		83.5	1	28	77		
12	738	2155	62	23.0	17.9	2.8 +	0.8	(50.7)	67	(7.0)	13		57.8	1	28	77		
13	27	2585f	8	23.0	40.4	0.3 +	0.0	(4.2)	90	(0.3)	1		4.6	1	10	21		
14	18	1775	8	23.0	43.0	0.2 +	0.0	(3.0)	93	(0.2)	0		3.3	1	10	21		
15	227	2020	72	19.2	39.5	1.2 +	1.3	(34.9)	111	(3.6)	7		38.5	1	82	5		
16	1761	4306	69	19.2	4.6	0.9 +	1.1	(28.6)	12	(3.0)	6		31.7	1	43	5		
17	349	1807	35	23.0	14.3	1.1 +	0.3	(19.0)	54	(2.7)	5		21.6	1	28	77		
21	153	1969	58	20.0	38.6	0.9 +	0.7	(23.0)	107	(2.3)	4		25.4	2	82	3		
22	1494	4286	51	20.0	2.9	0.5 +	0.5	(14.3)	7	(1.5)	3		15.7	2	32	3		
23	1862	4440	82	23.0	23.4	9.6 +	2.3	(168.2)	83	(22.2)	41		190.3	2	32	77		
24	183	1791	18	23.0	12.1	0.5 +	0.1	(8.4)	47	(1.2)	2		9.6	2	27	77		
25	170	2000	51	23.0	45.6	1.6 +	0.5	(30.2)	99	(2.4)	4		32.6	2	13	27		
26	126	1815	42	23.0	44.3	1.2 +	0.4	(21.7)	97	(1.7)	3		23.5	2	13	27		
191	1788	4350	41	23.0	1.2	0.0 +	0.3	(5.0)	1	(0.2)	0		5.2					
192	576	2100	27	23.0	1.7	0.0 +	0.2	(2.7)	1	(0.1)	0		2.8					
193	10	10000	1	7.7	36.1	0.1 +	0.0	(1.4)	88	(0.0)	0		1.4	1	82	3		
194	10	10000	1	7.7	40.4	0.1 +	0.0	(1.6)	93	(0.0)	0		1.6	1	32	39		
195	10	10000	2	7.7	42.9	0.1 +	0.0	(1.7)	96	(0.0)	0		1.7	1	16	21		
196	10	10000	0	7.7	18.1	0.0 +	0.0	(0.7)	61	(0.0)	0		0.7	1	43	77		
291	1664	4300	39	23.0	1.2	0.0 +	0.3	(4.5)	1	(0.2)	0		4.7					
292	336	2100	16	23.0	1.5	0.0 +	0.1	(1.4)	1	(0.1)	0		1.4					
293	10	10000	0	7.7	11.9	0.0 +	0.0	(0.4)	49	(0.0)	0		0.4	2	32	77		
294	10	10000	2	7.7	42.9	0.1 +	0.0	(1.7)	96	(0.0)	0		1.7	2	15	20		
295	10	10000	1	7.7	35.1	0.1 +	0.0	(1.4)	87	(0.0)	0		1.4	2	8	20		
296	10	10000	1	7.7	40.4	0.1 +	0.0	(1.6)	93	(0.0)	0		1.6	2	86	3		

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9)	+	(58.6)	+	(0.0)	=	562.5	TOTALS

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	145.2	+	40.8	+	26.7	=	212.8

NO. OF ENTRIES TO SUBPT = 1
NO. OF LINKS RECALCULATED= 25

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	32	77	3	20	27	

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9)	+	(58.6)	+	(0.0)	=	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 96

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	32	77	3	20	27	

TOTAL DISTANCE	TOTAL TIME	MEAN JOURNEY	TOTAL UNIFORM	TOTAL RANDOM+	TOTAL COST	TOTAL COST	PENALTY FOR	TOTAL PERFORMANCE

TRAVELLED (PCU-KM/H)	SPENT (PCU-H/H)	SPEED (KM/H)	DELAY (PCU-H/H)	OVERSAT DELAY (PCU-H/H)	OF DELAY ($/H)	OF STOPS ($/H)	EXCESS QUEUES ($/H)	INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9) + (	58.6) + (	0.0) =	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	32	77	3	20	27	

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9) + (	58.6) + (	0.0) =	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	32	77	3	20	27	

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9) + (	58.6) + (	0.0) =	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36 13
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	32	77	3	20	27	

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9) + (	58.6) + (	0.0) =	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

INTERMEDIATE SETTINGS - INCREMENTS SO FAR :- 13 36 13 36 13 1
- (SECONDS)

1	6	43	77	3	5	21	39
2	5	33	78	4	21	28	

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)	TOTAL COST OF STOPS ($/H)	PENALTY FOR EXCESS QUEUES ($/H)	TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9) + (	58.6) + (	0.0) =	562.5	TOTALS

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

90 SECOND CYCLE 90 STEPS

FINAL SETTINGS OBTAINED WITH INCREMENTS :- 13 36 13 36 13 1 1
- (SECONDS)

NODE NO	NUMBER OF STAGES	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	STAGE 8	STAGE 9	STAGE 10
1	6	43	77	3	5	21	39				
2	5	33	78	4	21	28					

LINK NUMBER	FLOW INTO LINK (PCU/H)	SAT FLOW (PCU/H)	DEGREE OF SAT (%)	MEAN TIMES PER PCU CRUISE (SEC)	DELAY (SEC)	DELAY UNIFORM (U+R+O=MEAN Q) (PCU-H/H)	OVERSAT RANDOM+ OVERSAT (PCU-H/H)	COST OF DELAY ($/H)	MEAN STOPS /PCU (%)	COST OF STOPS ($/H)	MEAN MAX. (PCU)	AVERAGE EXCESS (PCU)	PERFORMANCE INDEX. WEIGHTED SUM OF ( ) VALUES ($/H)	EXIT NODE	GREEN TIMES START 1ST (SECONDS)	START END 2ND
11	891	2155	74	23.0	21.5	3.8 +	1.4	(73.7)	77	(9.7)	18		83.5	1	28	77
12	738	2155	62	23.0	17.9	2.8 +	0.8	(50.7)	67	(7.0)	13		57.8	1	28	77
13	27	2585f	8	23.0	40.4	0.3 +	0.0	(4.2)	90	(0.3)	1		4.6	1	10	21
14	18	1775	8	23.0	43.0	0.2 +	0.0	(3.0)	93	(0.2)	0		3.3	1	10	21
15	227	2020	72	19.2	39.1	1.2 +	1.3	(34.6)	110	(3.6)	7		38.2	1	82	5
16	1761	4306	69	19.2	4.8	1.0 +	1.1	(29.8)	13	(3.2)	6		33.0	1	43	5
17	349	1807	35	23.0	14.3	1.1 +	0.3	(19.0)	54	(2.7)	5		21.6	1	28	77
21	153	1969	58	20.0	38.9	0.9 +	0.7	(23.2)	108	(2.4)	4		25.5	2	83	4
22	1494	4286	51	20.0	2.7	0.4 +	0.5	(13.2)	6	(1.3)	2		14.5	2	33	4
23	1862	4440	82	23.0	23.4	9.6 +	2.3	(168.2)	83	(22.2)	41		190.3	2	33	78
24	183	1791	18	23.0	12.1	0.5 +	0.1	(8.4)	47	(1.2)	2		9.6	2	28	78
25	170	2000	51	23.0	45.6	1.6 +	0.5	(30.2)	99	(2.4)	4		32.6	2	14	28
26	126	1815	42	23.0	44.3	1.2 +	0.4	(21.7)	97	(1.7)	3		23.5	2	14	28
191	1788	4350	41	23.0	1.2	0.0 +	0.3	(5.0)	1	(0.2)	0		5.2			
192	576	2100	27	23.0	1.7	0.0 +	0.2	(2.7)	1	(0.1)	0		2.8			
193	10	10000	1	7.7	36.1	0.1 +	0.0	(1.4)	88	(0.0)	0		1.4	1	82	3

194	10	10000	1	7.7	40.4	0.1	+	0.0	(	1.6)	93	(	0.0)	0		1.6	1	32	39
195	10	10000	2	7.7	42.9	0.1	+	0.0	(	1.7)	96	(	0.0)	0		1.7	1	16	21
196	10	10000	0	7.7	18.1	0.0	+	0.0	(	0.7)	61	(	0.0)	0		0.7	1	43	77
291	1664	4300	39	23.0	1.2	0.0	+	0.3	(	4.5)	1	(	0.2)	0		4.7			
292	336	2100	16	23.0	1.5	0.0	+	0.1	(	1.4)	1	(	0.1)	0		1.4			
293	10	10000	0	7.7	11.9	0.0	+	0.0	(	0.4)	49	(	0.0)	0		0.4	2	33	78
294	10	10000	2	7.7	42.9	0.1	+	0.0	(	1.7)	96	(	0.0)	0		1.7	2	16	21
295	10	10000	1	7.7	35.1	0.1	+	0.0	(	1.4)	87	(	0.0)	0		1.4	2	9	21
296	10	10000	1	7.7	40.4	0.1	+	0.0	(	1.6)	93	(	0.0)	0		1.6	2	87	4

*** f - average saturation flow for flared link ***

TOTAL DISTANCE TRAVELLED (PCU-KM/H)	TOTAL TIME SPENT (PCU-H/H)	MEAN JOURNEY SPEED (KM/H)	TOTAL UNIFORM DELAY (PCU-H/H)	TOTAL RANDOM+ OVERSAT DELAY (PCU-H/H)	TOTAL COST OF DELAY ($/H)		TOTAL COST OF STOPS ($/H)		PENALTY FOR EXCESS QUEUES ($/H)		TOTAL PERFORMANCE INDEX ($/H)	
2361.7	109.4	21.6	25.1	10.4	(503.9)	+	(58.6)	+	(0.0)	=	562.5	TOTALS

ROUTE

****

	CRUISE LITRES PER HOUR		DELAY LITRES PER HOUR		STOPS LITRES PER HOUR		TOTALS LITRES PER HOUR
FUEL CONSUMPTION PREDICTIONS	145.2	+	40.8	+	26.7	=	212.7

NO. OF ENTRIES TO SUBPT = 5
NO. OF LINKS RECALCULATED= 99

PROGRAM TRANSYT FINISHED

User	WSP - Basingstoke	Project				Page 1
Location		File	Site - Browne Access Cross Roads(a).LSG	SCN		Chkd	
Title				Controller	Generic	Appvd	

Phases

Phase Data					
Phase Name		Phase Type	Assoc Phase	Street Min	Cont Mln
A	A41 North Ahead	Traffic		7	7
B	A41 North Right	Traffic		7	7
C	Browne Access Left	Traffic		7	7
D	Browne Access Right Ahead	Traffic		7	7
E	A41 South Ahead Left	Traffic		7	7
F	A41 South Right	Traffic		7	7
G	Site Access Left Ahead	Traffic		7	7
H	Site Access Right	Traffic		7	7
I	Pedestrians across	Pedestrian		7	7
J	Pedestrians across	Pedestrian		7	7
K	Pedestrians across	Pedestrian		7	7
L	Pedestrians across	Pedestrian		5	5
M	Pedestrians across	Pedestrian		7	7
N	Pedestrians across	Pedestrian		5	5
O	A41 North Left	Traffic		7	7
P	Pedestrians across	Pedestrian		7	7

User	WSP - Basingstoke	Project				Page 2
Location		File	Site - Browne Access Cross Roads(a).LSG	SCN		Chkd	
Title				Controller	Generic	Appvd	

Phase Intergreens

From Phase	Phase Intergreens To Phase															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
A			6	5		5	5	5	5							
B			5	5	7		5	5	5			9				
C	5	5			5	5		5				7	5			
D	5	5			5	5	5			10			5			
E		5	5	5			5	5		9		8				
F	7		5	5			5	5						10	9	
G	8	7		5	5	5				7	5			7	7	
H	6	5	5		5	6					5				7	
I	14	14														
J				10	10		10									
K							10	10								
L		7	7		7											
M			10	10												
N						7	7									
O						5	5	5								5
P															7	

User	WSP - Basingstoke	Project				Page 3
Location		File	Site - Browne Access Cross Roads(a).LSG	SCN	Chkd	
Title				Controller	Generic	Appvd	

Prohibited Moves and Interstage Lengths

From Stage	Prohibited Moves To Stage							
	1	2	3	4	5	6	7	8
1	X	0	9	5	6	6	10	10
2	0	X	9	5	6	6	8	5
3	10	10	X	0	10	10	10	10
4	9	9	0	X	10	9	9	5
5	14	14	14	14	X	0	7	7
6	5	5	10	5	0	X	7	5
7	8	8	7	7	10	10	X	0
8	8	8	7	7	7	7	0	X