

TRL LIMITED

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

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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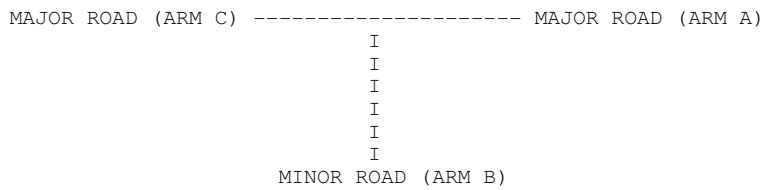
Run with file:-  
"N:\Projects\A046980-7 Thurmaston\calculations\PICADY\J31\_Humberstone Lane - Barkbythorpe Road\  
Humberstone Lane - Barkbthorpe Road - amended.vpi"  
(drive-on-the-left) at 15:29:27 on Friday, 1 August 2014

RUN INFORMATION  
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RUN TITLE : Barkbythorpe Road / Humberstone Lane, Thurmaston  
LOCATION : Thurmaston  
DATE : 16/07/14  
CLIENT : CEG  
ENUMERATOR : JJ  
JOB NUMBER : A046980-7  
STATUS : Final TA  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
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INPUT DATA  
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ARM A IS Humberstone Lane (NW)  
ARM B IS Barkbythorpe Road  
ARM C IS Humberstone Lane (S)

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.

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 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	( W ) 8.30 M.	I
I	CENTRAL RESERVE WIDTH	I	( WCR ) 0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	( WC-B ) 3.00 M.	I
I	- VISIBILITY	I	( VC-B ) 250.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	YES ( 9 )	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I	( VB-C ) 21.0 M.	I
I	- VISIBILITY TO RIGHT	I	( VB-A ) 16.0 M.	I
I	- LANE 1 WIDTH	I	( WB-C ) -	I
I	- LANE 2 WIDTH	I	( WB-A ) -	I
I	WIDTH AT 0 M FROM JUNCTION	I	8.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION	I	5.00 M.	I
I	WIDTH AT 10 M FROM JUNCTION	I	3.00 M.	I
I	WIDTH AT 15 M FROM JUNCTION	I	3.00 M.	I
I	WIDTH AT 20 M FROM JUNCTION	I	3.00 M.	I
I	- LENGTH OF FLARED SECTION	I	2 VEHS	I

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 .SLOPES AND INTERCEPT  
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(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	0.00		0.00		0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	781.32		0.27		0.27	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2014 Base Flows AM

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I		I	FLOW STARTS	I	BEFORE	I
I		I	TOP OF PEAK	I	AT TOP	I
I		I	IS REACHED	I	OF PEAK	I
I		I	FALLING	I	PEAK	I
I	ARM A	I	15.00	I	8.44	I
I	ARM B	I	15.00	I	4.04	I
I	ARM C	I	15.00	I	10.05	I



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	1.18	1.60	0.739		8.77	4.63	102.1		4.67
B-A	3.66	4.73	0.774		23.44	10.28	252.9		3.85
C-AB	1.36	10.27	0.133		0.21	0.15	2.3		0.11
A-B	1.45								
A-C	8.66								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.99	5.51	0.180		4.63	0.22	6.3		0.25
B-A	3.06	5.41	0.566		10.28	1.41	43.6		0.73
C-AB	1.14	10.71	0.107		0.15	0.12	1.8		0.10
A-B	1.22								
A-C	7.25								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.2
08.15	0.4
08.30	6.0 *****
08.45	8.8 *****
09.00	4.6 *****
09.15	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	1.2 *
08.15	2.7 ***
08.30	13.9 *****
08.45	23.4 *****
09.00	10.3 *****
09.15	1.4 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.2
08.45	0.2
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-C	I	108.7	I	72.5	I	281.0	I	2.58
I	B-A	I	335.8	I	223.9	I	758.8	I	2.26
I	C-AB	I	125.3	I	83.5	I	14.4	I	0.12
I	A-B	I	133.5	I	89.0	I		I	
I	A-C	I	795.6	I	530.4	I		I	
I	ALL	I	2480.3	I	1653.5	I	1054.2	I	0.43

\* 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 RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM	A-C	STREAM	A-B
I					
I	0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A
I							
I	0.00		0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM	A-C	STREAM	A-B
I					
I	781.32		0.27		0.27

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2014 Base Flows PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I							
I	I	I	FLOW STARTS	I	BEFORE	I							
I	I	I	TOP OF PEAK	I	AT TOP	I							
I	I	I	TO RISE	I	OF PEAK	I							
I	I	I	IS REACHED	I	PEAK	I							
I	I	I	FALLING	I	AFTER	I							
I	I	I	I	I	PEAK	I							
I	ARM A	I	15.00	I	45.00	I	75.00	I	10.84	I	16.26	I	10.84
I	ARM B	I	15.00	I	45.00	I	75.00	I	2.76	I	4.14	I	2.76
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.48	I	14.21	I	9.48





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	1.11	6.15	0.180		0.56	0.22	3.5		0.20
B-A	2.20	4.42	0.498		2.99	1.05	18.5		0.50
C-AB	1.65	9.48	0.174		0.30	0.21	3.2		0.13
A-B	3.34								
A-C	9.65								

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	0.93	7.12	0.130		0.22	0.15	2.4		0.16
B-A	1.84	5.11	0.361		1.05	0.58	9.4		0.31
C-AB	1.38	10.06	0.137		0.21	0.16	2.4		0.12
A-B	2.80								
A-C	8.08								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.5
17.45	0.6 *
18.00	0.2
18.15	0.2

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.5 *
17.15	0.9 *
17.30	2.7 ***
17.45	3.0 ***
18.00	1.0 *
18.15	0.6 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 101.9	I 67.9	I	26.0	I 0.26	I 26.0	I 0.26
I	B-A	I 202.3	I 134.9	I	124.1	I 0.61	I 124.1	I 0.61
I	C-AB	I 151.4	I 100.9	I	20.1	I 0.13	I 20.1	I 0.13
I	A-B	I 306.9	I 204.6	I		I	I	I
I	A-C	I 886.4	I 590.9	I		I	I	I
I	ALL	I 2540.9	I 1693.9	I	170.2	I 0.07	I 170.3	I 0.07

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 \* 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 RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM	A-C	STREAM	A-B
I					
I	0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A
I							
I	0.00		0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM	A-C	STREAM	A-B
I					
I	781.32		0.27		0.27

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2031+CommDev AM

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	IS REACHED	I	OF PEAK	I
I	I	I	FALLING	I	PEAK	I
I	I	I		I		I
I	I	I		I		I
I	ARM A	I	15.00	I	45.00	I 75.00
I	ARM B	I	15.00	I	45.00	I 75.00
I	ARM C	I	15.00	I	45.00	I 75.00
I		I		I		I 9.81
I		I		I		I 14.72
I		I		I		I 9.81
I		I		I		I 4.80
I		I		I		I 7.20
I		I		I		I 4.80
I		I		I		I 11.69
I		I		I		I 17.53
I		I		I		I 11.69





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	1.41	1.36	1.037		25.22	26.24	385.9		19.14
B-A	4.35	4.12	1.054		75.55	79.00	1159.1		18.48
C-AB	1.59	9.82	0.162		0.27	0.19	2.9		0.12
A-B	1.68								
A-C	10.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	1.18	1.59	0.743		26.24	20.99	354.3		15.51
B-A	3.64	4.83	0.754		79.00	62.08	1058.1		14.82
C-AB	1.33	10.34	0.129		0.19	0.15	2.2		0.11
A-B	1.41								
A-C	8.44								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.3
08.15	4.9 *****
08.30	14.9 *****
08.45	25.2 *****
09.00	26.2 *****
09.15	21.0 *****

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	2.5 **
08.15	9.9 *****
08.30	42.8 *****
08.45	75.5 *****
09.00	79.0 *****
09.15	62.1 *****

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.2
08.30	0.3
08.45	0.3
09.00	0.2
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 129.4	I 86.3	I 1241.2	I 9.59	I 1380.1	I 10.67	I
I	B-A	I 399.2	I 266.1	I 3631.1	I 9.10	I 4030.4	I 10.10	I
I	C-AB	I 145.9	I 97.3	I 18.3	I 0.13	I 18.3	I 0.13	I
I	A-B	I 154.2	I 102.8	I	I	I	I	I
I	A-C	I 926.3	I 617.6	I	I	I	I	I
I	ALL	I 2896.0	I 1930.7	I 4890.7	I 1.69	I 5428.8	I 1.87	I

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\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM
I							C-B	I
I	0.00		0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	781.32		0.27		0.27	I

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2031+CommDev PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	TO RISE	I	OF PEAK	I
I	I	I	IS REACHED	I	PEAK	I
I	I	I	FALLING	I	AFTER	I
I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I
I	ARM B	I	15.00	I	45.00	I
I	ARM C	I	15.00	I	45.00	I
I		I		I	75.00	I
I		I		I	12.66	I
I		I		I	18.99	I
I		I		I	12.66	I
I		I		I	3.30	I
I		I		I	4.95	I
I		I		I	3.30	I
I		I		I	11.07	I
I		I		I	16.61	I
I		I		I	11.07	I





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	1.32	1.85	0.712		12.19	6.29	138.6		5.22
B-A	2.64	3.62	0.728		22.99	10.45	250.8		4.91
C-AB	1.92	8.89	0.216		0.42	0.28	4.2		0.14
A-B	3.90								
A-C	11.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	1.10	5.63	0.196		6.29	0.25	8.8		0.27
B-A	2.21	4.49	0.491		10.45	1.04	40.0		0.81
C-AB	1.61	9.56	0.168		0.28	0.20	3.1		0.13
A-B	3.26								
A-C	9.45								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.2	
17.15	0.4	
17.30	7.5	*****
17.45	12.2	*****
18.00	6.3	*****
18.15	0.2	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	2.1	**
17.30	13.2	*****
17.45	23.0	*****
18.00	10.4	*****
18.15	1.0	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.4
17.45	0.4
18.00	0.3
18.15	0.2



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 121.1	I 80.8	I	I 369.4	I 3.05	I 369.4	I 3.05
I	B-A	I 242.3	I 161.5	I	I 720.6	I 2.97	I 720.8	I 2.98
I	C-AB	I 176.2	I 117.5	I	I 26.8	I 0.15	I 26.8	I 0.15
I	A-B	I 357.9	I 238.6	I	I	I	I	I
I	A-C	I 1036.4	I 691.0	I	I	I	I	I
I	ALL	I 2977.2	I 1984.8	I	I 1116.8	I 0.38	I 1116.9	I 0.38

\* 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 RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM	A-C	STREAM	A-B
I					
I	0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A
I							
I	0.00		0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM	A-C	STREAM	A-B
I					
I	781.32		0.27		0.27

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2016+CommDev+Phase 1 AM

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	IS REACHED	I	OF PEAK	I
I	I	I	FALLING	I	PEAK	I
I	I	I		I		I
I	I	I		I		I
I	ARM A	I	15.00	I	45.00	I 75.00
I	ARM B	I	15.00	I	45.00	I 75.00
I	ARM C	I	15.00	I	45.00	I 75.00





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	0.31	1.72	0.183		2.72	0.24	7.2		0.90
B-A	3.66	5.05	0.724		16.09	3.37	124.8		2.04
C-AB	0.61	10.27	0.060		0.08	0.06	1.0		0.10
A-B	1.15								
A-C	8.94								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	0.26	5.87	0.045		0.24	0.05	0.8		0.18
B-A	3.06	5.66	0.541		3.37	1.24	21.6		0.43
C-AB	0.51	10.72	0.048		0.06	0.05	0.8		0.10
A-B	0.97								
A-C	7.49								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.0	
08.15	0.1	
08.30	2.2	**
08.45	2.7	***
09.00	0.2	
09.15	0.0	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	2.3	**
08.30	10.4	*****
08.45	16.1	*****
09.00	3.4	***
09.15	1.2	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 28.9	I 19.3	I	66.2	I 2.29	I 66.2	I 2.29
I	B-A	I 335.8	I 223.9	I	493.9	I 1.47	I 494.1	I 1.47
I	C-AB	I 56.4	I 37.6	I	5.9	I 0.11	I 5.9	I 0.11
I	A-B	I 106.0	I 70.7	I		I	I	I
I	A-C	I 821.7	I 547.8	I		I	I	I
I	ALL	I 2345.4	I 1563.6	I	566.1	I 0.24	I 566.2	I 0.24

\* 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 RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM	A-C	STREAM	A-B
I					
I	0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A
I							
I	0.00		0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM	A-C	STREAM	A-B
I					
I	781.32		0.27		0.27

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2016+CommDev+Phase 1 PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	TO RISE	I	OF PEAK	I
I	I	I	IS REACHED	I	PEAK	I
I	I	I	FALLING	I	AFTER	I
I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I 75.00
I	ARM B	I	15.00	I	45.00	I 75.00
I	ARM C	I	15.00	I	45.00	I 75.00





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	0.76	6.26	0.122		0.25	0.14	2.2		0.18
B-A	2.14	4.76	0.451		1.95	0.86	14.2		0.40
C-AB	0.43	9.50	0.046		0.06	0.05	0.7		0.11
A-B	2.85								
A-C	10.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	0.64	7.03	0.091		0.14	0.10	1.6		0.16
B-A	1.79	5.39	0.333		0.86	0.51	8.2		0.28
C-AB	0.36	10.07	0.036		0.05	0.04	0.6		0.10
A-B	2.38								
A-C	8.44								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.2
17.45	0.3
18.00	0.1
18.15	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.5
17.15	0.8 *
17.30	1.8 **
17.45	1.9 **
18.00	0.9 *
18.15	0.5 *

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.1
17.45	0.1
18.00	0.0
18.15	0.0



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I
I	B-C	I 70.2	I 46.8	I 14.4	I 0.21	I 14.4	I 0.21	I
I	B-A	I 196.8	I 131.2	I 92.5	I 0.47	I 92.5	I 0.47	I
I	C-AB	I 39.9	I 26.6	I 4.5	I 0.11	I 4.5	I 0.11	I
I	A-B	I 261.5	I 174.3	I	I	I	I	I
I	A-C	I 926.3	I 617.6	I	I	I	I	I
I	ALL	I 2407.4	I 1604.9	I 111.4	I 0.05	I 111.4	I 0.05	I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM A-C	STREAM A-C	STREAM A-B	STREAM A-B	I
I	0.00	0.00	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM A-C	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B	STREAM C-B	I
I	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM A-C	STREAM A-C	STREAM A-B	STREAM A-B	I
I	781.32	0.27	0.27	0.27	0.27	I

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2021+CommDev+Phase 2 AM

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	IS REACHED	I	OF PEAK	I
I	I	I	FALLING	I	PEAK	I
I	I	I	I	I	I	I
I	ARM A	I	15.00	I	8.14	I
I	ARM B	I	15.00	I	4.72	I
I	ARM C	I	15.00	I	10.05	I





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	1.72	2.10	0.819		14.86	11.15	195.1		6.20
B-A	3.94	4.71	0.836		32.14	22.67	411.1		5.96
C-AB	1.09	10.36	0.106		0.16	0.12	1.8		0.11
A-B	1.20								
A-C	8.56								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	1.44	3.66	0.394		11.15	0.70	39.6		0.94
B-A	3.30	5.34	0.618		22.67	1.96	148.5		2.20
C-AB	0.92	10.80	0.085		0.12	0.09	1.4		0.10
A-B	1.00								
A-C	7.16								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.3	
08.15	0.7	*
08.30	9.2	*****
08.45	14.9	*****
09.00	11.2	*****
09.15	0.7	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	3.5	***
08.30	18.4	*****
08.45	32.1	*****
09.00	22.7	*****
09.15	2.0	**

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I
I	B-C	I 158.3	I 105.5	I 509.4	I 3.22	I 509.5	I 3.22	I
I	B-A	I 362.0	I 241.3	I 1168.7	I 3.23	I 1169.1	I 3.23	I
I	C-AB	I 100.5	I 67.0	I 11.1	I 0.11	I 11.1	I 0.11	I
I	A-B	I 110.1	I 73.4	I	I	I	I	I
I	A-C	I 785.9	I 524.0	I	I	I	I	I
I	ALL	I 2523.0	I 1682.0	I 1689.2	I 0.67	I 1689.6	I 0.67	I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM A-C	STREAM A-C	STREAM A-B	I
I	0.00	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B	I	I
I	0.00	0.00	0.00	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM A-C	STREAM A-B	STREAM A-B	I
I	781.32	0.27	0.27	0.27	I

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2021+CommDev+Phase 2 PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	I	I	FLOW STARTS	I	BEFORE	I								
I	I	I	TOP OF PEAK	I	AT TOP	I								
I	I	I	IS REACHED	I	OF PEAK	I								
I	I	I	FALLING	I	PEAK	I								
I	I	I	I	I	I	I								
I	I	I	I	I	I	I								
I	ARM A	I	15.00	I	45.00	I	75.00	I	10.91	I	16.37	I	10.91	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	2.74	I	4.11	I	2.74	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	8.76	I	13.14	I	8.76	I





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	0.93	5.89	0.158		0.46	0.19	3.0		0.20
B-A	2.35	4.63	0.508		2.98	1.09	19.1		0.49
C-AB	0.39	9.46	0.041		0.06	0.04	0.6		0.11
A-B	2.32								
A-C	10.76								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	0.78	6.87	0.113		0.19	0.13	2.0		0.16
B-A	1.97	5.29	0.373		1.09	0.61	9.8		0.31
C-AB	0.33	10.04	0.033		0.04	0.03	0.5		0.10
A-B	1.94								
A-C	9.01								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.4
17.45	0.5
18.00	0.2
18.15	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	1.0	*
17.30	2.7	***
17.45	3.0	***
18.00	1.1	*
18.15	0.6	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.1
17.45	0.1
18.00	0.0
18.15	0.0



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 85.3	I 56.9	I	I 21.8	I 0.26	I 21.8	I 0.26
I	B-A	I 216.1	I 144.1	I	I 126.3	I 0.58	I 126.3	I 0.58
I	C-AB	I 35.8	I 23.9	I	I 4.0	I 0.11	I 4.0	I 0.11
I	A-B	I 213.3	I 142.2	I	I	I	I	I
I	A-C	I 988.3	I 658.8	I	I	I	I	I
I	ALL	I 2467.9	I 1645.3	I	I 152.1	I 0.06	I 152.2	I 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 RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM
I							C-B	I
I	0.00		0.00		0.00		0.00	I

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	781.32		0.27		0.27	I

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2031+CommDev+AllDev AM

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	I	I	FLOW STARTS	I	BEFORE	I
I	I	I	TOP OF PEAK	I	AT TOP	I
I	I	I	TO RISE	I	OF PEAK	I
I	I	I	IS REACHED	I	AFTER	I
I	I	I	FALLING	I	PEAK	I
I	ARM A	I	15.00	I	75.00	I
I	ARM B	I	15.00	I	75.00	I
I	ARM C	I	15.00	I	75.00	I





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	2.16	1.95	1.109		41.37	44.66	645.2		21.69
B-A	4.54	4.06	1.118		85.80	93.04	1341.3		21.34
C-AB	1.23	9.75	0.126		0.20	0.15	2.2		0.12
A-B	1.26								
A-C	10.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	1.81	2.25	0.802		44.66	38.69	625.1		18.98
B-A	3.80	4.71	0.807		93.04	80.12	1298.7		18.60
C-AB	1.03	10.28	0.100		0.15	0.11	1.7		0.11
A-B	1.05								
A-C	9.00								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.6	*
08.15	7.5	*****
08.30	24.3	*****
08.45	41.4	*****
09.00	44.7	*****
09.15	38.7	*****

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	2.9	***
08.15	12.9	*****
08.30	49.4	*****
08.45	85.8	*****
09.00	93.0	*****
09.15	80.1	*****

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I						
I	B-C	I	198.2	I	132.1	I	2079.5	I	10.49	I	2411.6	I	12.17	I
I	B-A	I	417.1	I	278.0	I	4281.1	I	10.27	I	4962.0	I	11.90	I
I	C-AB	I	112.9	I	75.2	I	13.6	I	0.12	I	13.6	I	0.12	I
I	A-B	I	115.6	I	77.1	I		I		I		I		I
I	A-C	I	986.9	I	657.9	I		I		I		I		I
I	ALL	I	2945.6	I	1963.7	I	6374.3	I	2.16	I	7387.2	I	2.51	I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM B-C	STREAM	A-C	STREAM	A-B
I					
I	0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A
I							
I	0.00		0.00		0.00		0.00

\* Due to the presence of a flare, data is not available

I	Intercept For	Slope For	Opposing	Slope For	Opposing
I	STREAM C-B	STREAM	A-C	STREAM	A-B
I					
I	781.32		0.27		0.27

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2031+CommDev+AllDev PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	I	I	FLOW STARTS	I	BEFORE	I								
I	I	I	TOP OF PEAK	I	AT TOP	I								
I	I	I	TO RISE	I	OF PEAK	I								
I	I	I	IS REACHED	I	PEAK	I								
I	I	I	FALLING	I	AFTER	I								
I	I	I	I	I	I	I								
I	ARM A	I	15.00	I	45.00	I	75.00	I	13.02	I	19.54	I	13.02	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.09	I	4.63	I	3.09	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.38	I	14.06	I	9.38	I





TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	1.03	2.69	0.384		6.84	0.67	25.3		1.02
B-A	2.67	4.00	0.668		14.65	2.55	107.3		2.25
C-AB	0.00	7.97	0.000		0.00	0.00	0.0		0.00
A-B	2.25								
A-C	13.36								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	0.87	6.07	0.143		0.67	0.17	2.7		0.19
B-A	2.23	4.80	0.466		2.55	0.91	15.7		0.42
C-AB	0.00	8.60	0.000		0.00	0.00	0.0		0.00
A-B	1.88								
A-C	11.19								

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

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.2	
17.15	0.3	
17.30	4.9	*****
17.45	6.8	*****
18.00	0.7	*
18.15	0.2	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.7	**
17.30	9.2	*****
17.45	14.7	*****
18.00	2.5	***
18.15	0.9	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0



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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD  
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I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-C	I 95.0	I 63.3	I	167.8	I 1.77	I 167.8	I 1.77
I	B-A	I 245.0	I 163.3	I	425.6	I 1.74	I 425.6	I 1.74
I	C-AB	I 0.0	I 0.0	I	0.0	I 0.00	I 0.0	I 0.00
I	A-B	I 206.5	I 137.6	I		I	I	I
I	A-C	I 1227.8	I 818.5	I		I	I	I
I	ALL	I 2806.5	I 1871.0	I	593.4	I 0.21	I 593.5	I 0.21

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 \* 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.  
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\*\*\*\*\*END OF RUN\*\*\*\*\*

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