

TRL LIMITED

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

PICADY 5.0 ANALYSIS PROGRAM  
RELEASE 3.0 (JUNE 2006)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS  
IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-  
"C:\E DRIVE DOCS\WORKING JOB FILES\Bicester\Oct 2010 onwards\Junction Capacity\Junc 1 & 2, Exem Access\  
Priority Junctions\Junction 1 - Exemplar.vpi"  
(drive-on-the-left ) at 08:54:28 on Thursday, 11 November 2010

#### RUN INFORMATION

\*\*\*\*\*

RUN TITLE: Junction 1  
LOCATION: Bicester  
DATE: 08/11/10  
CLIENT:  
ENUMERATOR: mba24773 [HCL56181]  
JOB NUMBER: UA001881  
STATUS: Preliminary  
DESCRIPTION:

.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 B4100 Banbury Rd (s)  
ARM B IS Northern Site Access  
ARM C IS B4100 Banbury Rd (n)

#### 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) 215.0 M. |
| - BLOCKS TRAFFIC                   | NO              |
| MINOR ROAD - VISIBILITY TO LEFT    | (VB-C) 215.0 M. |
| - VISIBILITY TO RIGHT              | (VB-A) 215.0 M. |
| - LANE 1 WIDTH                     | (WB-C) -        |
| - LANE 2 WIDTH                     | (WB-A) -        |
| - WIDTH AT 0 M FROM JUNC.          | 10.00 M.        |
| - WIDTH AT 5 M FROM JUNC.          | 7.65 M.         |
| - WIDTH AT 10 M FROM JUNC.         | 6.00 M.         |
| - WIDTH AT 15 M FROM JUNC.         | 5.60 M.         |
| - WIDTH AT 20 M FROM JUNC.         | 5.10 M.         |
| - LENGTH OF FLARED SECTION         | DERIVED: 3 PCU  |

.SLOPES AND INTERCEPT

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

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 698.47                   | 0.26                          | 0.10                          |

| Intercept For Stream B-A | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | Slope For Opposing Stream C-A | Slope For Opposing Stream C-B |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 610.77                   | 0.27                          | 0.11                          | 0.17                          | 0.38                          |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 797.29                   | 0.30                          | 0.30                          |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.00-08.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.04                | 8.74                  | 0.005                        |                                  | 0.00                     | 0.01                   | 0.1                                 |                                               | 0.11                                           |
| B-A         | 0.93                | 6.43                  | 0.144                        |                                  | 0.11                     | 0.17                   | 2.4                                 |                                               | 0.18                                           |
| C-A         | 15.37               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 10.63                 | 0.001                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.09                                           |
| A-B         | 0.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.15-08.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.06                | 8.09                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| B-A         | 1.14                | 4.99                  | 0.228                        |                                  | 0.17                     | 0.29                   | 4.1                                 |                                               | 0.26                                           |
| C-A         | 18.83               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.02                | 10.03                 | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.10                                           |
| A-B         | 0.55                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.11               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.30-08.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.06                | 8.08                  | 0.007                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| B-A         | 1.14                | 4.99                  | 0.228                        |                                  | 0.29                     | 0.29                   | 4.4                                 |                                               | 0.26                                           |
| C-A         | 18.83               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.02                | 10.03                 | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.10                                           |
| A-B         | 0.55                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.11               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 08.45-09.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.04                | 8.74                  | 0.005                        |                                  | 0.01                     | 0.01                   | 0.1                                 |                                               | 0.12                                           |
| B-A         | 0.93                | 6.43                  | 0.144                        |                                  | 0.29                     | 0.17                   | 2.7                                 |                                               | 0.18                                           |
| C-A         | 15.37               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 10.63                 | 0.001                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.09                                           |
| A-B         | 0.45                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 8.26                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 09.00-09.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.04                | 9.18                  | 0.004                        |                                  | 0.01                     | 0.00                   | 0.1                                 |                                               | 0.11                                           |
| B-A         | 0.78                | 7.47                  | 0.104                        |                                  | 0.17                     | 0.12                   | 1.8                                 |                                               | 0.15                                           |
| C-A         | 12.87               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 11.06                 | 0.001                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.09                                           |
| A-B         | 0.38                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 6.91                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| QUEUE FOR STREAM B-C   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
| 08.00                  | 0.0                            |
| 08.15                  | 0.0                            |
| 08.30                  | 0.0                            |
| 08.45                  | 0.0                            |
| 09.00                  | 0.0                            |
| 09.15                  | 0.0                            |

| QUEUE FOR STREAM B-A   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>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                            |

| QUEUE FOR STREAM C-B   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
| 08.00                  | 0.0                            |
| 08.15                  | 0.0                            |
| 08.30                  | 0.0                            |
| 08.45                  | 0.0                            |
| 09.00                  | 0.0                            |
| 09.15                  | 0.0                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL  | I | DEMAND  | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------|---|---------|---|--------------|---|------------------------|---|
| I |        | I |        | I |         | I | * DELAY *    | I | * DELAY *              | I |
| I |        | I |        | I |         | I |              | I |                        | I |
| I |        | I | (VEH)  | I | (VEH/H) | I | (MIN)        | I | (MIN/VEH)              | I |
| I | B-C    | I | 4.1    | I | 2.8     | I | 0.5          | I | 0.12                   | I |
| I | B-A    | I | 85.3   | I | 56.9    | I | 17.1         | I | 0.20                   | I |
| I | C-A    | I | 1412.2 | I | 941.5   | I |              | I |                        | I |
| I | C-B    | I | 1.4    | I | 0.9     | I | 0.1          | I | 0.09                   | I |
| I | A-B    | I | 41.3   | I | 27.5    | I |              | I |                        | I |
| I | A-C    | I | 758.4  | I | 505.6   | I |              | I |                        | I |
| I | ALL    | I | 2302.8 | I | 1535.2  | I | 17.7         | I | 0.01                   | I |

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

END OF JOB

.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 | 698.47        |           | 0.26     |           | 0.10     | I |

| 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      | I |
| I | 610.77        |           | 0.27     |           | 0.11     |           | 0.17     | I |
|   |               |           |          |           |          |           | 0.38     | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B    | Stream    | A-C      | Stream    | A-B      | I |
| I | 797.29        |           | 0.30     |           | 0.30     | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

| ARM | FLOW SCALE(%) |
|-----|---------------|
| A   | 100           |
| B   | 100           |
| C   | 100           |

Demand set: 2026 Exemplar PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM   | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|-------------------------------------------------------|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00                                                 | 45.00                  | 75.00              | 10.63                              | 15.94          | 10.63      |
| ARM B | 15.00                                                 | 45.00                  | 75.00              | 0.41                               | 0.62           | 0.41       |
| ARM C | 15.00                                                 | 45.00                  | 75.00              | 8.57                               | 12.86          | 8.57       |

| TIME          | FROM/TO | ARM A                    | ARM B                   | ARM C                    |
|---------------|---------|--------------------------|-------------------------|--------------------------|
| 16.45 - 18.15 | ARM A   | 0.000<br>0.0<br>( 0.0)   | 0.055<br>47.0<br>( 4.3) | 0.945<br>803.0<br>( 3.1) |
|               | ARM B   | 0.970<br>32.0<br>( 3.1)  | 0.000<br>0.0<br>( 0.0)  | 0.030<br>1.0<br>( 0.0)   |
|               | ARM C   | 0.999<br>685.0<br>( 3.9) | 0.001<br>1.0<br>( 0.0)  | 0.000<br>0.0<br>( 0.0)   |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

# QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS  
AND FOR TIME PERIOD 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) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|-----------------------------------------|------------------------------------------|
| 16.45-17.00 |                  |                    |                       |                            |                    |                  |                               |                                         |                                          |
| B-C         | 0.01             | 8.46               | 0.001                 |                            | 0.00               | 0.00             | 0.0                           |                                         | 0.12                                     |
| B-A         | 0.40             | 7.34               | 0.055                 |                            | 0.00               | 0.06             | 0.8                           |                                         | 0.14                                     |
| C-A         | 8.60             |                    |                       |                            |                    |                  |                               |                                         |                                          |
| C-B         | 0.01             | 10.04              | 0.001                 |                            | 0.00               | 0.00             | 0.0                           |                                         | 0.10                                     |
| A-B         | 0.59             |                    |                       |                            |                    |                  |                               |                                         |                                          |
| A-C         | 10.08            |                    |                       |                            |                    |                  |                               |                                         |                                          |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.00-17.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.01                | 7.91                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.13                                           |
| B-A         | 0.48                | 6.27                  | 0.077                        |                                  | 0.06                     | 0.08                   | 1.2                                 |                                               | 0.17                                           |
| C-A         | 10.26               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 9.41                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.11                                           |
| A-B         | 0.70                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 12.03               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.15-17.30 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.02                | 7.12                  | 0.003                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.14                                           |
| B-A         | 0.59                | 4.78                  | 0.123                        |                                  | 0.08                     | 0.14                   | 2.0                                 |                                               | 0.24                                           |
| C-A         | 12.57               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.02                | 8.53                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.12                                           |
| A-B         | 0.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 14.74               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.30-17.45 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.02                | 7.12                  | 0.003                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.14                                           |
| B-A         | 0.59                | 4.78                  | 0.123                        |                                  | 0.14                     | 0.14                   | 2.1                                 |                                               | 0.24                                           |
| C-A         | 12.57               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.02                | 8.53                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.12                                           |
| A-B         | 0.86                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 14.74               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 17.45-18.00 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.01                | 7.91                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.13                                           |
| B-A         | 0.48                | 6.27                  | 0.077                        |                                  | 0.14                     | 0.08                   | 1.3                                 |                                               | 0.17                                           |
| C-A         | 10.26               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 9.41                  | 0.002                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.11                                           |
| A-B         | 0.70                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 12.03               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |

| TIME        | DEMAND<br>(VEH/MIN) | CAPACITY<br>(VEH/MIN) | DEMAND/<br>CAPACITY<br>(RFC) | PEDESTRIAN<br>FLOW<br>(PEDS/MIN) | START<br>QUEUE<br>(VEHS) | END<br>QUEUE<br>(VEHS) | DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | GEOMETRIC DELAY<br>(VEH.MIN/<br>TIME SEGMENT) | AVERAGE DELAY<br>PER ARRIVING<br>VEHICLE (MIN) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------------------------------------------|
| 18.00-18.15 |                     |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| B-C         | 0.01                | 8.46                  | 0.001                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.12                                           |
| B-A         | 0.40                | 7.34                  | 0.055                        |                                  | 0.08                     | 0.06                   | 0.9                                 |                                               | 0.14                                           |
| C-A         | 8.60                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| C-B         | 0.01                | 10.04                 | 0.001                        |                                  | 0.00                     | 0.00                   | 0.0                                 |                                               | 0.10                                           |
| A-B         | 0.59                |                       |                              |                                  |                          |                        |                                     |                                               |                                                |
| A-C         | 10.08               |                       |                              |                                  |                          |                        |                                     |                                               |                                                |



| QUEUE FOR STREAM B-C   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>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                            |

| QUEUE FOR STREAM B-A   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>IN QUEUE |
| 17.00                  | 0.1                            |
| 17.15                  | 0.1                            |
| 17.30                  | 0.1                            |
| 17.45                  | 0.1                            |
| 18.00                  | 0.1                            |
| 18.15                  | 0.1                            |

| QUEUE FOR STREAM C-B   |                                |
|------------------------|--------------------------------|
| TIME SEGMENT<br>ENDING | NO. OF<br>VEHICLES<br>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                            |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I       | * QUEUEING * | I         | * INCLUSIVE QUEUEING * | I         |
|---|--------|---|--------------|---------|--------------|-----------|------------------------|-----------|
| I |        | I |              | I       | * DELAY *    | I         | * DELAY *              | I         |
| I |        | I |              | I       |              | I         |                        | I         |
| I |        | I | (VEH)        | (VEH/H) | (MIN)        | (MIN/VEH) | (MIN)                  | (MIN/VEH) |
| I | B-C    | I | 1.4          | 0.9     | 0.2          | 0.13      | 0.2                    | 0.13      |
| I | B-A    | I | 44.0         | 29.4    | 8.3          | 0.19      | 8.3                    | 0.19      |
| I | C-A    | I | 942.9        | 628.6   | I            | I         | I                      | I         |
| I | C-B    | I | 1.4          | 0.9     | 0.1          | 0.11      | 0.1                    | 0.11      |
| I | A-B    | I | 64.7         | 43.1    | I            | I         | I                      | I         |
| I | A-C    | I | 1105.3       | 736.8   | I            | I         | I                      | I         |
| I | ALL    | I | 2159.6       | 1439.7  | 8.6          | 0.00      | 8.6                    | 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  
 ===== end of file =====