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

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

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Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
16.Wimbourne Rd_Ffordd y Mileniwm\Ffordd y Mileniwm_Wimbourne Rd Priority.vpi"
(drive-on-the-left) at 16:27:00 on Tuesday, 14 July 2009

.RUN INFORMATION

RUN TITLE : Ffordd y Mileniwm / wimbourne Road Priority
LOCATION :
DATE : 14/07/09
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

```

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

ARM A IS Ffordd y Mileniwm (E)
ARM B IS Wimbourne Rd (S)
ARM C IS Ffordd y Mileniwm (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

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-----------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 10.37 M. | I |
| I | CENTRAL RESERVE WIDTH | I | (WCR) 3.60 M. | I |
| I | | I | | I |
| I | MAJOR ROAD RIGHT TURN - WIDTH | I | (WC-B) 4.00 M. | I |
| I | - VISIBILITY | I | (VC-B)175.00 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 150.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 170.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) - | I |
| I | - LANE 2 WIDTH | I | (WB-A) - | I |
| I | | I | | I |
| I | WIDTH AT 0 M FROM JUNCTION | I | 10.00 M. | I |
| I | WIDTH AT 5 M FROM JUNCTION | I | 10.00 M. | I |
| I | WIDTH AT 10 M FROM JUNCTION | I | 8.00 M. | I |
| I | WIDTH AT 15 M FROM JUNCTION | I | 7.00 M. | I |
| I | WIDTH AT 20 M FROM JUNCTION | I | 6.00 M. | I |
| I | - LENGTH OF FLARED SECTION | I | 3 VEHS | I |

.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 | STREAM A-B | STREAM A-C | 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 | Slope For | Opposing | I |
|---|---------------|------------|------------|------------|------------|------------|------------|------------|------------|---|
| I | STREAM B-A | STREAM A-C | STREAM A-B | STREAM A-B | STREAM C-A | STREAM C-A | STREAM C-B | STREAM C-B | STREAM C-B | I |
| I | 0.00 | 0.00 | 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-B | STREAM A-B | I |
| I | 807.60 | | 0.25 | | 0.25 | 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: AM 2020 with Dev

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

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 | TOP OF PEAK | FLOW STOPS | I | BEFORE | I |
| I | | I | TO RISE | IS REACHED | FALLING | I | AT TOP | I |
| I | | I | | | | I | OF PEAK | I |
| I | | I | | | | I | AFTER | I |
| I | | I | | | | I | PEAK | I |
| I | ARM A | I | 15.00 | 45.00 | 75.00 | I | 12.00 | I |
| I | ARM B | I | 15.00 | 45.00 | 75.00 | I | 2.49 | I |
| I | ARM C | I | 15.00 | 45.00 | 75.00 | I | 14.30 | I |
| | | | | | | | 18.00 | 12.00 |
| | | | | | | | 3.73 | 2.49 |
| | | | | | | | 21.45 | 14.30 |

.Demand set: AM 2020 with Dev

| I | | I | TURNING PROPORTIONS | I |
|---|---------------|---|-----------------------|---|
| I | | I | TURNING COUNTS | I |
| I | | I | (PERCENTAGE OF H.V.S) | I |
| I | TIME | I | FROM/TO | I |
| I | | I | ARM A | I |
| I | | I | ARM B | I |
| I | | I | ARM C | I |
| I | 08.15 - 08.30 | I | | I |
| I | | I | 0.000 | I |
| I | | I | 0.161 | I |
| I | | I | 0.839 | I |
| I | | I | 0.0 | I |
| I | | I | 155.0 | I |
| I | | I | 805.0 | I |
| I | | I | (0.0) | I |
| I | | I | (13.0) | I |
| I | | I | (7.0) | I |
| I | | I | | I |
| I | | I | 0.452 | I |
| I | | I | 0.000 | I |
| I | | I | 0.548 | I |
| I | | I | 90.0 | I |
| I | | I | 0.0 | I |
| I | | I | 109.0 | I |
| I | | I | (30.0) | I |
| I | | I | (0.0) | I |
| I | | I | (11.0) | I |
| I | | I | | I |
| I | | I | 0.824 | I |
| I | | I | 0.176 | I |
| I | | I | 0.000 | I |
| I | | I | 943.0 | I |
| I | | I | 201.0 | I |
| I | | I | 0.0 | I |
| I | | I | (2.0) | I |
| I | | I | (4.0) | I |
| I | | I | (0.0) | I |
| I | | I | | I |

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 DEMAND SET AM 2020 with Dev
AND FOR TIME PERIOD 1

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY | I |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|-----------------|---------------|---|
| I | | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | PER ARRIVING | I |
| I | | | | (RFC) | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | VEHICLE (MIN) | I |
| I | 08.15-08.30 | | | | | | | | | | I |
| I | B-C | 1.37 | 9.11 | 0.150 | | 0.00 | 0.17 | 2.5 | | 0.13 | I |
| I | B-A | 1.13 | 4.86 | 0.232 | | 0.00 | 0.30 | 4.2 | | 0.27 | I |
| I | C-A | 11.83 | | | | | | | | | I |
| I | C-B | 2.52 | 9.77 | 0.258 | | 0.00 | 0.34 | 4.9 | | 0.14 | I |
| I | A-B | 1.94 | | | | | | | | | I |
| I | A-C | 10.10 | | | | | | | | | I |

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY | I |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|-----------------|---------------|---|
| I | | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | PER ARRIVING | I |
| I | | | | (RFC) | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | VEHICLE (MIN) | I |
| I | 08.30-08.45 | | | | | | | | | | I |
| I | B-C | 1.63 | 8.34 | 0.196 | | 0.17 | 0.24 | 3.5 | | 0.15 | I |
| I | B-A | 1.35 | 3.99 | 0.338 | | 0.30 | 0.49 | 6.9 | | 0.37 | I |
| I | C-A | 14.13 | | | | | | | | | I |
| I | C-B | 3.01 | 9.16 | 0.329 | | 0.34 | 0.48 | 7.0 | | 0.16 | I |
| I | A-B | 2.32 | | | | | | | | | I |
| I | A-C | 12.06 | | | | | | | | | I |

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY | I |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|-----------------|---------------|---|
| I | | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | PER ARRIVING | I |
| I | | | | (RFC) | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | VEHICLE (MIN) | I |
| I | 08.45-09.00 | | | | | | | | | | I |
| I | B-C | 2.00 | 6.81 | 0.294 | | 0.24 | 0.41 | 5.9 | | 0.21 | I |
| I | B-A | 1.65 | 2.80 | 0.590 | | 0.49 | 1.28 | 16.6 | | 0.80 | I |
| I | C-A | 17.30 | | | | | | | | | I |
| I | C-B | 3.69 | 8.31 | 0.444 | | 0.48 | 0.78 | 11.1 | | 0.21 | I |
| I | A-B | 2.84 | | | | | | | | | I |
| I | A-C | 14.77 | | | | | | | | | I |

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY | I |
|---|------|--------|----------|---------|------------|-------|-----|-------|-----------------|---------------|---|
|---|------|--------|----------|---------|------------|-------|-----|-------|-----------------|---------------|---|

| | (VEH/MIN) | (VEH/MIN) | CAPACITY | 2020 | with dev | and with | dev+tourism.vpo | | PER ARRIVING |
|---|-------------|-----------|----------|------------|----------|----------|-----------------|---------------|---------------|
| I | | | (RFC) | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | VEHICLE (MIN) |
| I | | | | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | |
| I | 09.00-09.15 | | | | | | | | |
| I | B-C | 2.00 | 6.71 | 0.298 | 0.41 | 0.42 | 6.2 | | 0.21 |
| I | B-A | 1.65 | 2.79 | 0.591 | 1.28 | 1.35 | 19.9 | | 0.86 |
| I | C-A | 17.30 | | | | | | | |
| I | C-B | 3.69 | 8.31 | 0.444 | 0.78 | 0.79 | 11.8 | | 0.22 |
| I | A-B | 2.84 | | | | | | | |
| I | A-C | 14.77 | | | | | | | |

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|-----------------|---------------|
| I | | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | PER ARRIVING |
| I | | | | (RFC) | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | VEHICLE (MIN) |
| I | 09.15-09.30 | | | | | | | | | |
| I | B-C | 1.63 | 8.29 | 0.197 | | 0.42 | 0.25 | 3.9 | | 0.15 |
| I | B-A | 1.35 | 3.99 | 0.338 | | 1.35 | 0.53 | 8.8 | | 0.39 |
| I | C-A | 14.13 | | | | | | | | |
| I | C-B | 3.01 | 9.16 | 0.329 | | 0.79 | 0.50 | 7.8 | | 0.16 |
| I | A-B | 2.32 | | | | | | | | |
| I | A-C | 12.06 | | | | | | | | |

| I | TIME | DEMAND | CAPACITY | DEMAND/ | PEDESTRIAN | START | END | DELAY | GEOMETRIC DELAY | AVERAGE DELAY |
|---|-------------|-----------|-----------|----------|------------|--------|--------|---------------|-----------------|---------------|
| I | | (VEH/MIN) | (VEH/MIN) | CAPACITY | FLOW | QUEUE | QUEUE | (VEH.MIN/ | (VEH.MIN/ | PER ARRIVING |
| I | | | | (RFC) | (PEDS/MIN) | (VEHS) | (VEHS) | TIME SEGMENT) | TIME SEGMENT) | VEHICLE (MIN) |
| I | 09.30-09.45 | | | | | | | | | |
| I | B-C | 1.37 | 9.09 | 0.150 | | 0.25 | 0.18 | 2.8 | | 0.13 |
| I | B-A | 1.13 | 4.85 | 0.233 | | 0.53 | 0.31 | 4.9 | | 0.27 |
| I | C-A | 11.83 | | | | | | | | |
| I | C-B | 2.52 | 9.77 | 0.258 | | 0.50 | 0.35 | 5.4 | | 0.14 |
| I | A-B | 1.94 | | | | | | | | |
| I | A-C | 10.10 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT | NO. OF VEHICLES IN QUEUE |
|--------------|--------------------------|
| 08.30 | 0.2 |
| 08.45 | 0.2 |
| 09.00 | 0.4 |
| 09.15 | 0.4 |
| 09.30 | 0.2 |
| 09.45 | 0.2 |

QUEUE FOR STREAM B-A

| TIME SEGMENT | NO. OF VEHICLES IN QUEUE |
|--------------|--------------------------|
| 08.30 | 0.3 |
| 08.45 | 0.5 |
| 09.00 | 1.3 * |
| 09.15 | 1.4 * |
| 09.30 | 0.5 * |
| 09.45 | 0.3 |

QUEUE FOR STREAM C-B

| TIME SEGMENT | NO. OF VEHICLES IN QUEUE |
|--------------|--------------------------|
| 08.30 | 0.3 |
| 08.45 | 0.5 |
| 09.00 | 0.8 * |
| 09.15 | 0.8 * |
| 09.30 | 0.5 |
| 09.45 | 0.4 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | I | * QUEUEING * DELAY * | I | * INCLUSIVE QUEUEING * DELAY * | I |
|---|--------|---|--------------|---|----------------------|---|--------------------------------|---|
| I | | I | (VEH) | I | (MIN) | I | (MIN) | I |
| I | | I | (VEH/H) | I | (MIN/VEH) | I | (MIN/VEH) | I |
| I | B-C | I | 150.0 | I | 24.7 | I | 0.16 | I |
| I | B-A | I | 123.9 | I | 61.2 | I | 0.49 | I |
| I | C-A | I | 1298.0 | I | | I | | I |
| I | C-B | I | 276.7 | I | 48.1 | I | 0.17 | I |
| I | A-B | I | 213.3 | I | | I | | I |
| I | A-C | I | 1108.0 | I | | I | | I |
| I | ALL | I | 3169.9 | I | 134.0 | I | 0.04 | 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 | STREAM A-B |
| I | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

| I | Intercept For I STREAM B-A | Slope For I STREAM | For Opposing I A-C | Slope For Opposing I STREAM A-B | For Opposing I C-A | Slope For Opposing I STREAM C-B | For Opposing 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 I STREAM C-B | Slope For I STREAM | For Opposing I A-C | Slope For Opposing I STREAM A-B | I |
|---|-------------------------------|-----------------------|-----------------------|------------------------------------|---|
| I | 807.60 | | 0.25 | 0.25 | 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: PM 2020 with Dev

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

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 I FLOW STARTS I TO RISE | I | MINUTES FROM I TOP OF PEAK I IS REACHED | I | MINUTES FROM I START WHEN I FLOW STOPS I FALLING | I | RATE OF FLOW I BEFORE I PEAK | I | AT TOP I OF PEAK | I | AFTER I PEAK | I |
|---|-----|---|---|---|---|---|---|---|------------------------------------|---|---------------------|---|-----------------|---|
| I | A | I | 15.00 | I | 45.00 | I | 75.00 | I | 15.32 | I | 22.99 | I | 15.32 | I |
| I | B | I | 15.00 | I | 45.00 | I | 75.00 | I | 5.46 | I | 8.19 | I | 5.46 | I |
| I | C | I | 15.00 | I | 45.00 | I | 75.00 | I | 12.10 | I | 18.15 | I | 12.10 | I |

.Demand set: PM 2020 with Dev

| I | TIME | I | FROM/TO | I | ARM | A | I | ARM | B | I | ARM | C | I |
|---|---------------|---|---------|---|--------|---|---------|-----|--------|---|-----|---|---|
| I | 16.15 - 16.30 | I | ARM A | I | 0.000 | I | 0.060 | I | 0.940 | I | | I | |
| I | | I | | I | 0.0 | I | 73.0 | I | 1153.0 | I | | I | |
| I | | I | | I | (0.0) | I | (27.0) | I | (2.0) | I | | I | |
| I | | I | ARM B | I | 0.430 | I | 0.000 | I | 0.570 | I | | I | |
| I | | I | | I | 188.0 | I | 0.0 | I | 249.0 | I | | I | |
| I | | I | | I | (6.0) | I | (0.0) | I | (3.0) | I | | I | |
| I | | I | ARM C | I | 0.903 | I | 0.097 | I | 0.000 | I | | I | |
| I | | I | | I | 874.0 | I | 94.0 | I | 0.0 | I | | I | |
| I | | I | | I | (2.0) | I | (9.0) | I | (0.0) | I | | I | |

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 DEMAND SET: PM 2020 with Dev
AND FOR TIME PERIOD: 2

| I | TIME | I | DEMAND (VEH/MIN) | I | CAPACITY (VEH/MIN) | I | DEMAND/ CAPACITY (RFC) | I | PEDESTRIAN FLOW (PEDS/MIN) | I | START QUEUE (VEHS) | I | END QUEUE (VEHS) | I | DELAY (VEH.MIN/ TIME SEGMENT) | I | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | I | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | I |
|---|-------------|---|---------------------|---|-----------------------|---|------------------------------|---|----------------------------------|---|--------------------------|---|------------------------|---|-------------------------------------|---|---|---|--|---|
| I | 16.15-16.30 | I | | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | B-C | I | 3.12 | I | 8.58 | I | 0.364 | I | | I | 0.00 | I | 0.56 | I | 8.0 | I | | I | 0.18 | I |
| I | B-A | I | 2.36 | I | 5.64 | I | 0.418 | I | | I | 0.00 | I | 0.70 | I | 9.6 | I | | I | 0.30 | I |
| I | C-A | I | 10.97 | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | C-B | I | 1.18 | I | 8.65 | I | 0.136 | I | | I | 0.00 | I | 0.16 | I | 2.3 | I | | I | 0.13 | I |
| I | A-B | I | 0.92 | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | A-C | I | 14.47 | I | | I | | I | | I | | I | | I | | I | | I | | I |

| I | TIME | I | DEMAND (VEH/MIN) | I | CAPACITY (VEH/MIN) | I | DEMAND/ CAPACITY (RFC) | I | PEDESTRIAN FLOW (PEDS/MIN) | I | START QUEUE (VEHS) | I | END QUEUE (VEHS) | I | DELAY (VEH.MIN/ TIME SEGMENT) | I | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | I | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | I |
|---|-------------|---|---------------------|---|-----------------------|---|------------------------------|---|----------------------------------|---|--------------------------|---|------------------------|---|-------------------------------------|---|---|---|--|---|
| I | 16.30-16.45 | I | | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | B-C | I | 3.73 | I | 7.17 | I | 0.520 | I | | I | 0.56 | I | 1.04 | I | 14.6 | I | | I | 0.29 | I |
| I | B-A | I | 2.82 | I | 4.46 | I | 0.632 | I | | I | 0.70 | I | 1.56 | I | 20.7 | I | | I | 0.57 | I |
| I | C-A | I | 13.10 | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | C-B | I | 1.41 | I | 7.93 | I | 0.178 | I | | I | 0.16 | I | 0.21 | I | 3.1 | I | | I | 0.15 | I |
| I | A-B | I | 1.09 | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | A-C | I | 17.28 | I | | I | | I | | I | | I | | I | | I | | I | | I |

| I | TIME | I | DEMAND (VEH/MIN) | I | CAPACITY (VEH/MIN) | I | DEMAND/ CAPACITY (RFC) | I | PEDESTRIAN FLOW (PEDS/MIN) | I | START QUEUE (VEHS) | I | END QUEUE (VEHS) | I | DELAY (VEH.MIN/ TIME SEGMENT) | I | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | I | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) | I |
|---|-------------|---|---------------------|---|-----------------------|---|------------------------------|---|----------------------------------|---|--------------------------|---|------------------------|---|-------------------------------------|---|---|---|--|---|
| I | 16.45-17.00 | I | | I | | I | | I | | I | | I | | I | | I | | I | | I |
| I | B-C | I | 4.57 | I | 3.66 | I | 1.247 | I | | I | 1.04 | I | 17.04 | I | 144.4 | I | | I | 3.07 | I |
| I | B-A | I | 3.45 | I | 2.81 | I | 1.229 | I | | I | 1.56 | I | 13.33 | I | 117.9 | I | | I | 3.41 | I |

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| | | | | | | | | | | | |
|---|-----|-------|------|-------|--|------|------|-----|--|------|--|
| I | C-A | 16.04 | | | | | | | | | |
| I | C-B | 1.72 | 6.94 | 0.249 | | 0.21 | 0.33 | 4.7 | | 0.19 | |
| I | A-B | 1.34 | | | | | | | | | |
| I | A-C | 21.16 | | | | | | | | | |

| 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) |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| I | 17.00-17.15 | | | | | | | | | |
| I | B-C | 4.57 | 3.68 | 1.240 | | 17.04 | 30.70 | 358.5 | | 6.43 |
| I | B-A | 3.45 | 2.80 | 1.232 | | 13.33 | 23.50 | 276.6 | | 6.64 |
| I | C-A | 16.04 | | | | | | | | |
| I | C-B | 1.72 | 6.94 | 0.249 | | 0.33 | 0.33 | 4.9 | | 0.19 |
| I | A-B | 1.34 | | | | | | | | |
| I | A-C | 21.16 | | | | | | | | |

| 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) |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| I | 17.15-17.30 | | | | | | | | | |
| I | B-C | 3.73 | 5.06 | 0.737 | | 30.70 | 13.08 | 328.4 | | 4.48 |
| I | B-A | 2.82 | 3.84 | 0.733 | | 23.50 | 10.46 | 254.7 | | 4.66 |
| I | C-A | 13.10 | | | | | | | | |
| I | C-B | 1.41 | 7.93 | 0.178 | | 0.33 | 0.22 | 3.4 | | 0.15 |
| I | A-B | 1.09 | | | | | | | | |
| I | A-C | 17.28 | | | | | | | | |

| 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) |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| I | 17.30-17.45 | | | | | | | | | |
| I | B-C | 3.12 | 8.20 | 0.381 | | 13.08 | 0.63 | 27.2 | | 0.28 |
| I | B-A | 2.36 | 5.56 | 0.424 | | 10.46 | 0.77 | 29.5 | | 0.49 |
| I | C-A | 10.97 | | | | | | | | |
| I | C-B | 1.18 | 8.65 | 0.136 | | 0.22 | 0.16 | 2.5 | | 0.13 |
| I | A-B | 0.92 | | | | | | | | |
| I | A-C | 14.47 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.6 * |
| 16.45 | 1.0 ** |
| 17.00 | 17.0 ***** |
| 17.15 | 30.7 ***** |
| 17.30 | 13.1 ***** |
| 17.45 | 0.6 * |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.7 * |
| 16.45 | 1.6 ** |
| 17.00 | 13.3 ***** |
| 17.15 | 23.5 ***** |
| 17.30 | 10.5 ***** |
| 17.45 | 0.8 * |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.2 |
| 16.45 | 0.2 |
| 17.00 | 0.3 |
| 17.15 | 0.3 |
| 17.30 | 0.2 |
| 17.45 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND (VEH) | I | * QUEUEING DELAY (MIN) | I | * INCLUSIVE QUEUEING DELAY (MIN) | I | * (MIN/VEH) | I | * (MIN/VEH) |
|---|--------|---|--------------------|---|------------------------|---|----------------------------------|---|-------------|---|-------------|
| I | B-C | I | 342.7 | I | 228.5 | I | 881.0 | I | 2.57 | I | 881.0 |
| I | B-A | I | 258.8 | I | 172.5 | I | 709.1 | I | 2.74 | I | 709.1 |
| I | C-A | I | 1203.0 | I | 802.0 | I | | I | | I | |
| I | C-B | I | 129.4 | I | 86.3 | I | 20.8 | I | 0.16 | I | 20.8 |
| I | A-B | I | 100.5 | I | 67.0 | I | | I | | I | |
| I | A-C | I | 1587.0 | I | 1058.0 | I | | I | | I | |
| I | ALL | I | 3621.4 | I | 2414.3 | I | 1610.9 | I | 0.44 | I | 1610.9 |

* 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 Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing 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 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 | 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 Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B | I |
|---|--------------------------|-------------------------------|-------------------------------|---|
| I | 807.60 | 0.25 | 0.25 | I |

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

.TRAFFIC DEMAND DATA

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

.Demand set: PM 2020 with Dev+Tourism

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

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

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | I | TOP OF PEAK IS REACHED | I | FLOW STOPS FALLING | I | RATE OF FLOW (VEH/MIN) BEFORE PEAK | I | AT TOP OF PEAK | I | AFTER PEAK | I |
|---|-------|---|---|------------------------|---|--------------------|---|------------------------------------|---|----------------|---|------------|---|
| I | ARM A | 15.00 | I | 45.00 | I | 75.00 | I | 16.58 | I | 24.86 | I | 16.58 | I |
| I | ARM B | 15.00 | I | 45.00 | I | 75.00 | I | 5.46 | I | 8.19 | I | 5.46 | I |
| I | ARM C | 15.00 | I | 45.00 | I | 75.00 | I | 13.46 | I | 20.19 | I | 13.46 | I |

.Demand set: PM 2020 with Dev+Tourism

| I | TIME | I | FROM/TO | I | ARM | A | I | ARM | B | I | ARM | C | I |
|---|---------------|---|---------|---|--------|---|---------|-----|--------|---|-----|---|---|
| I | 16.15 - 16.30 | I | ARM A | I | 0.000 | I | 0.055 | I | 0.945 | I | | I | |
| I | | I | | I | 0.0 | I | 73.0 | I | 1253.0 | I | | I | |
| I | | I | | I | (0.0) | I | (27.0) | I | (2.0) | I | | I | |
| I | | I | ARM B | I | 0.430 | I | 0.000 | I | 0.570 | I | | I | |
| I | | I | | I | 188.0 | I | 0.0 | I | 249.0 | I | | I | |
| I | | I | | I | (6.0) | I | (0.0) | I | (3.0) | I | | I | |
| I | | I | ARM C | I | 0.913 | I | 0.087 | I | 0.000 | I | | I | |
| I | | I | | I | 983.0 | I | 94.0 | I | 0.0 | I | | I | |
| I | | I | | I | (2.0) | I | (9.0) | I | (0.0) | I | | I | |

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 DEMAND SET AND FOR TIME PERIOD PM 2020 with Dev+Tourism 2

| 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) | I |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|---|
| I | 16.15-16.30 | | | | | | | | | | I |
| I | B-C | 3.12 | 8.17 | 0.382 | | 0.00 | 0.61 | 8.6 | | 0.20 | I |
| I | B-A | 2.36 | 5.13 | 0.460 | | 0.00 | 0.82 | 11.1 | | 0.35 | I |
| I | C-A | 12.33 | | | | | | | | | I |
| I | C-B | 1.18 | 8.35 | 0.141 | | 0.00 | 0.16 | 2.3 | | 0.14 | I |
| I | A-B | 0.92 | | | | | | | | | I |
| I | A-C | 15.72 | | | | | | | | | I |

| 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) | I |
|---|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|---|
| I | 16.30-16.45 | | | | | | | | | | I |
| I | B-C | 3.73 | 6.28 | 0.594 | | 0.61 | 1.38 | 18.8 | | 0.38 | I |
| I | B-A | 2.82 | 3.82 | 0.738 | | 0.82 | 2.32 | 29.0 | | 0.84 | I |
| I | C-A | 14.73 | | | | | | | | | I |
| I | C-B | 1.41 | 7.57 | 0.186 | | 0.16 | 0.23 | 3.3 | | 0.16 | I |
| I | A-B | 1.09 | | | | | | | | | I |
| I | A-C | 18.77 | | | | | | | | | 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.45-17.00 | | | | | | | | | |
| B-C | 4.57 | 2.87 | 1.595 | | 1.38 | 27.90 | 224.1 | | 5.72 |
| B-A | 3.45 | 2.22 | 1.557 | | 2.32 | 21.61 | 182.4 | | 6.23 |
| C-A | 18.04 | | | | | | | | |
| C-B | 1.72 | 6.50 | 0.265 | | 0.23 | 0.35 | 5.1 | | 0.21 |
| A-B | 1.34 | | | | | | | | |
| A-C | 22.99 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 17.00-17.15 | | | | | | | | | |
| B-C | 4.57 | 2.90 | 1.574 | | 27.90 | 52.96 | 606.6 | | 11.77 |
| B-A | 3.45 | 2.21 | 1.562 | | 21.61 | 40.32 | 464.6 | | 11.97 |
| C-A | 18.04 | | | | | | | | |
| C-B | 1.72 | 6.50 | 0.265 | | 0.35 | 0.36 | 5.3 | | 0.21 |
| A-B | 1.34 | | | | | | | | |
| A-C | 22.99 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 17.15-17.30 | | | | | | | | | |
| B-C | 3.73 | 4.54 | 0.821 | | 52.96 | 42.06 | 712.7 | | 10.03 |
| B-A | 2.82 | 3.44 | 0.818 | | 40.32 | 32.17 | 543.7 | | 10.15 |
| C-A | 14.73 | | | | | | | | |
| C-B | 1.41 | 7.57 | 0.186 | | 0.36 | 0.23 | 3.6 | | 0.16 |
| A-B | 1.09 | | | | | | | | |
| A-C | 18.77 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 17.30-17.45 | | | | | | | | | |
| B-C | 3.12 | 5.60 | 0.558 | | 42.06 | 6.84 | 366.7 | | 4.66 |
| B-A | 2.36 | 4.26 | 0.554 | | 32.17 | 5.64 | 283.6 | | 4.81 |
| C-A | 12.33 | | | | | | | | |
| C-B | 1.18 | 8.35 | 0.141 | | 0.23 | 0.17 | 2.6 | | 0.14 |
| A-B | 0.92 | | | | | | | | |
| A-C | 15.72 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.6 |
| 16.45 | 1.4 |
| 17.00 | 27.9 |
| 17.15 | 53.0 |
| 17.30 | 42.1 |
| 17.45 | 6.8 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.8 |
| 16.45 | 2.3 |
| 17.00 | 21.6 |
| 17.15 | 40.3 |
| 17.30 | 32.2 |
| 17.45 | 5.6 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---------------------|--------------------------|
| 16.30 | 0.2 |
| 16.45 | 0.2 |
| 17.00 | 0.4 |
| 17.15 | 0.4 |
| 17.30 | 0.2 |
| 17.45 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | * QUEUEING DELAY (MIN) | * INCLUSIVE QUEUEING DELAY (MIN) |
|--------|--------------------|------------------------|----------------------------------|
| B-C | 342.7 | 1937.4 | 1941.6 |
| B-A | 258.8 | 1514.4 | 1518.1 |
| C-A | 1353.0 | | |
| C-B | 129.4 | 22.3 | 22.3 |
| A-B | 100.5 | | |
| A-C | 1724.7 | | |
| ALL | 3909.1 | 3474.1 | 3482.0 |

* 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

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* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.
*****END OF RUN*****