

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

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Run with file:-
"W:\Projects\6301 - Drehid MBT Facility\05-Design\01-Calculations\Traffic\Picady\AM Peak Check Scen 1.vpi"
(drive-on-the-left) at 14:44:18 on Wednesday, 30 May 2012

RUN INFORMATION

RUN TITLE: 6301-MBT-AM Turning Check Scen 1
LOCATION: Drehid
DATE: 10/07/08
CLIENT:
ENUMERATOR: Brendan Ward [DUB-35LJ52J-BW]
JOB NUMBER: 6301
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS R403 West
ARM B IS Entrance
ARM C IS R403 East

STREAM LABELLING CONVENTION

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

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 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

 .SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream C-A | Opposing Stream C-A | Slope For Stream C-B | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | | 0.50 | | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2015

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | I | 15.00 | I | 45.00 | I | 75.00 | I | 4.09 | I | 6.13 | I | 4.09 | I |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 0.30 | I | 0.45 | I | 0.30 | I |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 1.79 | I | 2.68 | I | 1.79 | I |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.183 | 0.817 |
| | | 0.0 | 60.0 | 267.0 |
| | | (0.0) | (11.7) | (4.1) |
| | ARM B | 0.292 | 0.000 | 0.708 |
| | | 7.0 | 0.0 | 17.0 |
| | | (57.1) | (0.0) | (41.2) |
| | ARM C | 0.769 | 0.231 | 0.000 |
| | | 110.0 | 33.0 | 0.0 |
| | | (10.9) | (21.2) | (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 DEMAND SET Scenario 1 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.41 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.41 | 9.66 | 0.043 | | 0.00 | 0.04 | 0.6 | | 0.11 |
| A-B | 0.75 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.20 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.49 | 9.45 | 0.052 | | 0.04 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.90 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.91 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.61 | 9.16 | 0.066 | | 0.05 | 0.07 | 1.0 | | 0.12 |
| A-B | 1.10 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.91 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.61 | 9.16 | 0.066 | | 0.07 | 0.07 | 1.1 | | 0.12 |
| A-B | 1.10 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.20 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.49 | 9.45 | 0.052 | | 0.07 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.90 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.30 | 8.41 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.41 | 9.66 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.11 |
| A-B | 0.75 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|---|-------|--------------|-----|-------|------------------------|---|-----|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I | I | | | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.2 | I | 0.13 | I | 4.2 | I | 0.13 | I |
| I | C-A | I | 151.4 | I | 100.9 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 45.4 | I | 30.3 | I | 5.1 | I | 0.11 | I | 5.1 | I | 0.11 | I |
| I | A-B | I | 82.6 | I | 55.1 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 367.5 | I | 245.0 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 680.0 | I | 453.3 | I | 9.3 | I | 0.01 | I | 9.3 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 1 - 2028

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.51 | 6.77 | 4.51 |
| B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| C | 15.00 | 45.00 | 75.00 | 1.99 | 2.98 | 1.99 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|--|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | |
| 07.30 - 09.00 | ARM A | 0.000 | 0.172 | 0.828 | 0.0 | 62.0 | 299.0 | (0.0) | (11.3) | (4.0) | |
| | ARM B | 0.259 | 0.000 | 0.741 | 7.0 | 0.0 | 20.0 | (57.1) | (0.0) | (4.0) | |
| | ARM C | 0.767 | 0.233 | 0.000 | 122.0 | 37.0 | 0.0 | (10.7) | (21.6) | (0.0) | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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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 Scenario 1 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.34 | 8.43 | 0.040 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.46 | 9.52 | 0.049 | | 0.00 | 0.05 | 0.7 | | 0.11 |
| A-B | 0.78 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.40 | 8.20 | 0.049 | | 0.04 | 0.05 | 0.8 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.55 | 9.29 | 0.060 | | 0.05 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.93 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.50 | 7.88 | 0.063 | | 0.05 | 0.07 | 1.0 | | 0.14 |
| C-A | 2.24 | | | | | | | | |
| C-B | 0.68 | 8.97 | 0.076 | | 0.06 | 0.08 | 1.2 | | 0.12 |
| A-B | 1.14 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.50 | 7.88 | 0.063 | | 0.07 | 0.07 | 1.0 | | 0.14 |
| C-A | 2.24 | | | | | | | | |
| C-B | 0.68 | 8.97 | 0.076 | | 0.08 | 0.08 | 1.2 | | 0.12 |
| A-B | 1.14 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.40 | 8.20 | 0.049 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.55 | 9.29 | 0.060 | | 0.08 | 0.08 | 1.0 | | 0.11 |
| A-B | 0.93 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.34 | 8.43 | 0.040 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.46 | 9.52 | 0.049 | | 0.06 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.78 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | |
| I | I | I | I | I | I | I | I | (MIN/VEH) | |
| I | B-AC | I | 37.2 | I | 24.8 | I | 4.8 | I | 0.13 |
| I | C-A | I | 167.9 | I | 111.9 | I | I | I | I |
| I | C-B | I | 50.9 | I | 34.0 | I | 5.8 | I | 0.11 |
| I | A-B | I | 85.3 | I | 56.9 | I | I | I | I |
| I | A-C | I | 411.6 | I | 274.4 | I | I | I | I |
| I | ALL | I | 752.9 | I | 501.9 | I | 10.6 | I | 0.01 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream |
| I | I | I | I | I | I | I | I | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | |
| | | | | | | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2015

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 3.91 | 5.87 | 3.91 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 1.96 | 2.94 | 1.96 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.147 | 0.853 | 0.0 | 46.0 | 267.0 | (0.0) | (13.0) | (4.1) |
| | ARM B | 0.208 | 0.000 | 0.792 | 5.0 | 0.0 | 19.0 | (60.0) | (0.0) | (4.1) |
| | ARM C | 0.701 | 0.299 | 0.000 | 110.0 | 47.0 | 0.0 | (10.9) | (17.0) | (0.0) |

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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 Scenario 2 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.55 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.59 | 10.06 | 0.059 | | 0.00 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.58 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.35 | 0.043 | | 0.04 | 0.04 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.70 | 9.85 | 0.071 | | 0.06 | 0.08 | 1.1 | | 0.11 |
| A-B | 0.69 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 8.07 | 0.055 | | 0.04 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.86 | 9.56 | 0.090 | | 0.08 | 0.10 | 1.4 | | 0.11 |
| A-B | 0.84 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 8.07 | 0.055 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.86 | 9.56 | 0.090 | | 0.10 | 0.10 | 1.5 | | 0.11 |
| A-B | 0.84 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.35 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.70 | 9.85 | 0.071 | | 0.10 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.69 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.30 | 8.55 | 0.035 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.59 | 10.06 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.11 |
| A-B | 0.58 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.1 | I | 0.13 | I |
| I | C-A | I | 151.4 | I | 100.9 | I | I | I | I | I |
| I | C-B | I | 64.7 | I | 43.1 | I | 7.1 | I | 0.11 | I |
| I | A-B | I | 63.3 | I | 42.2 | I | I | I | I | I |
| I | A-C | I | 367.5 | I | 245.0 | I | I | I | I | I |
| I | ALL | I | 680.0 | I | 453.3 | I | 11.2 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2028

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.34 | 6.51 | 4.34 |
| B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| C | 15.00 | 45.00 | 75.00 | 2.16 | 3.24 | 2.16 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|---------|--|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | |
| 07.30 - 09.00 | ARM A | 0.000 | 0.138 | 0.862 | 0.0 | 48.0 | 299.0 | (0.0) | (12.5) | (4.0) | |
| | ARM B | 0.185 | 0.000 | 0.815 | 5.0 | 0.0 | 22.0 | (60.0) | (0.0) | (40.0) | |
| | ARM C | 0.705 | 0.295 | 0.000 | 122.0 | 51.0 | 0.0 | (10.7) | (17.6) | (0.0) | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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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 Scenario 2 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.34 | 8.56 | 0.040 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.64 | 9.89 | 0.065 | | 0.00 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.60 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.40 | 8.34 | 0.049 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.76 | 9.67 | 0.079 | | 0.07 | 0.09 | 1.3 | | 0.11 |
| A-B | 0.72 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.50 | 8.03 | 0.062 | | 0.05 | 0.07 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 0.94 | 9.35 | 0.100 | | 0.09 | 0.11 | 1.6 | | 0.12 |
| A-B | 0.88 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.50 | 8.03 | 0.062 | | 0.07 | 0.07 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 0.94 | 9.35 | 0.100 | | 0.11 | 0.11 | 1.7 | | 0.12 |
| A-B | 0.88 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.40 | 8.34 | 0.049 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.76 | 9.67 | 0.079 | | 0.11 | 0.11 | 1.3 | | 0.11 |
| A-B | 0.72 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.34 | 8.56 | 0.040 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.64 | 9.89 | 0.065 | | 0.09 | 0.07 | 1.1 | | 0.11 |
| A-B | 0.60 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 37.2 | 24.8 | 4.7 |
| C-A | 167.9 | 111.9 | 0.13 |
| C-B | 70.2 | 46.8 | 7.9 |
| A-B | 66.1 | 44.0 | |
| A-C | 411.6 | 274.4 | |
| ALL | 752.9 | 501.9 | 12.6 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2015

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 3.83 | 5.74 | 3.83 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.05 | 3.07 | 2.05 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.127 | 0.873 | 0.0 | 39.0 | 267.0 | (0.0) | (15.4) | (4.1) |
| | ARM B | 0.208 | 0.000 | 0.792 | 5.0 | 0.0 | 19.0 | (60.0) | (0.0) | (4.1) |
| | ARM C | 0.671 | 0.329 | 0.000 | 110.0 | 54.0 | 0.0 | (10.9) | (14.8) | (0.0) |

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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 Scenario 3 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.55 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.68 | 10.27 | 0.066 | | 0.00 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.49 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.35 | 0.043 | | 0.04 | 0.04 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.81 | 10.07 | 0.080 | | 0.07 | 0.09 | 1.3 | | 0.11 |
| A-B | 0.58 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 8.07 | 0.055 | | 0.04 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.99 | 9.78 | 0.101 | | 0.09 | 0.11 | 1.6 | | 0.11 |
| A-B | 0.72 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 8.07 | 0.055 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.99 | 9.78 | 0.101 | | 0.11 | 0.11 | 1.7 | | 0.11 |
| A-B | 0.72 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.35 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.81 | 10.07 | 0.080 | | 0.11 | 0.11 | 1.3 | | 0.11 |
| A-B | 0.58 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.30 | 8.55 | 0.035 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.68 | 10.27 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.10 |
| A-B | 0.49 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I |
|---|--------|---|--------------|---------|---|--------------|-----------|---|------------------------|-----------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I |
| I | I | I | I | | I | I | | I | I | | I |
| I | I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 33.0 | 22.0 | I | 4.1 | 0.13 | I | 4.1 | 0.13 | I |
| I | C-A | I | 151.4 | 100.9 | I | I | I | I | I | I | I |
| I | C-B | I | 74.3 | 49.6 | I | 8.1 | 0.11 | I | 8.1 | 0.11 | I |
| I | A-B | I | 53.7 | 35.8 | I | I | I | I | I | I | I |
| I | A-C | I | 367.5 | 245.0 | I | I | I | I | I | I | I |
| I | ALL | I | 680.0 | 453.3 | I | 12.2 | 0.02 | I | 12.2 | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2028

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.25 | 6.38 | 4.25 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.25 | 3.38 | 2.25 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.121 | 0.879 |
| | | 0.0 | 41.0 | 299.0 |
| | | (0.0) | (14.6) | (4.0) |
| | ARM B | 0.185 | 0.000 | 0.815 |
| | | 5.0 | 0.0 | 22.0 |
| | | (60.0) | (0.0) | (40.0) |
| | ARM C | 0.678 | 0.322 | 0.000 |
| | | 122.0 | 58.0 | 0.0 |
| | | (10.7) | (15.5) | (0.0) |
| | | | | |
| | | | | |
| | | | | |

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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 Scenario 3 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.34 | 8.56 | 0.040 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.73 | 10.10 | 0.072 | | 0.00 | 0.08 | 1.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.40 | 8.34 | 0.049 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.87 | 9.87 | 0.088 | | 0.08 | 0.10 | 1.4 | | 0.11 |
| A-B | 0.61 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.50 | 8.03 | 0.062 | | 0.05 | 0.07 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.06 | 9.55 | 0.111 | | 0.10 | 0.12 | 1.8 | | 0.12 |
| A-B | 0.75 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.50 | 8.03 | 0.062 | | 0.07 | 0.07 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.06 | 9.55 | 0.111 | | 0.12 | 0.12 | 1.9 | | 0.12 |
| A-B | 0.75 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.40 | 8.34 | 0.049 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.87 | 9.87 | 0.088 | | 0.12 | 0.10 | 1.5 | | 0.11 |
| A-B | 0.61 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.34 | 8.56 | 0.040 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.73 | 10.10 | 0.072 | | 0.10 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 37.2 | I | 24.8 | I | 4.7 | I | 0.13 | I |
| I | C-A | I | 167.9 | I | 111.9 | I | I | I | I | I |
| I | C-B | I | 79.8 | I | 53.2 | I | 8.9 | I | 0.11 | I |
| I | A-B | I | 56.4 | I | 37.6 | I | I | I | I | I |
| I | A-C | I | 411.6 | I | 274.4 | I | I | I | I | I |
| I | ALL | I | 752.9 | I | 501.9 | I | 13.6 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2015

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 3.72 | 5.59 | 3.72 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.15 | 3.23 | 2.15 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.104 | 0.896 |
| | | 0.0 | 31.0 | 267.0 |
| | | (0.0) | (16.1) | (4.1) |
| | ARM B | 0.167 | 0.000 | 0.833 |
| | | 4.0 | 0.0 | 20.0 |
| | | (50.0) | (0.0) | (46.0) |
| | ARM C | 0.640 | 0.360 | 0.000 |
| | | 110.0 | 62.0 | 0.0 |
| | | (10.9) | (14.5) | (0.0) |
| | | | | |
| | | | | |
| | | | | |

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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 Scenario 4 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.65 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.78 | 10.33 | 0.075 | | 0.00 | 0.08 | 1.2 | | 0.10 |
| A-B | 0.39 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.46 | 0.043 | | 0.04 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.93 | 10.13 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.11 |
| A-B | 0.46 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 8.19 | 0.054 | | 0.04 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.14 | 9.85 | 0.116 | | 0.10 | 0.13 | 1.9 | | 0.11 |
| A-B | 0.57 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 8.19 | 0.054 | | 0.06 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.14 | 9.85 | 0.116 | | 0.13 | 0.13 | 1.9 | | 0.11 |
| A-B | 0.57 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.46 | 0.043 | | 0.06 | 0.04 | 0.7 | | 0.12 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.93 | 10.13 | 0.092 | | 0.13 | 0.13 | 1.6 | | 0.11 |
| A-B | 0.46 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.30 | 8.65 | 0.035 | | 0.04 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.78 | 10.33 | 0.075 | | 0.10 | 0.08 | 1.3 | | 0.10 |
| A-B | 0.39 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | |
| I | I | I | I | I | I | I | I | (MIN/VEH) | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.1 | I | 0.12 |
| I | C-A | I | 151.4 | I | 100.9 | I | | I | |
| I | C-B | I | 85.3 | I | 56.9 | I | 9.3 | I | 0.11 |
| I | A-B | I | 42.7 | I | 28.4 | I | | I | |
| I | A-C | I | 367.5 | I | 245.0 | I | | I | |
| I | ALL | I | 680.0 | I | 453.3 | I | 13.4 | I | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream |
| I | I | I | I | I | I | I | I | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | |
| | | | | | | | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2028

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 |
|-----|---|------------------------|--------------------|------------------------------------|----------------|------------|
| A | 15.00 | 45.00 | 75.00 | 4.15 | 6.23 | 4.15 |
| B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| C | 15.00 | 45.00 | 75.00 | 2.35 | 3.52 | 2.35 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.099 | 0.901 |
| | | 0.0 | 33.0 | 299.0 |
| | | (0.0) | (15.2) | (4.0) |
| | ARM B | 0.148 | 0.000 | 0.852 |
| | | 4.0 | 0.0 | 23.0 |
| | | (50.0) | (0.0) | (4.0) |
| ARM C | 0.649 | 0.351 | 0.000 | |
| | 122.0 | 66.0 | 0.0 | |
| | (10.7) | (15.2) | (0.0) | |

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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 Scenario 4 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.34 | 8.66 | 0.039 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.83 | 10.15 | 0.082 | | 0.00 | 0.09 | 1.3 | | 0.11 |
| A-B | 0.41 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.40 | 8.44 | 0.048 | | 0.04 | 0.05 | 0.7 | | 0.12 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.99 | 9.93 | 0.100 | | 0.09 | 0.11 | 1.6 | | 0.11 |
| A-B | 0.49 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.50 | 8.15 | 0.061 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.21 | 9.62 | 0.126 | | 0.11 | 0.14 | 2.1 | | 0.12 |
| A-B | 0.61 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.50 | 8.15 | 0.061 | | 0.06 | 0.06 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.21 | 9.62 | 0.126 | | 0.14 | 0.14 | 2.1 | | 0.12 |
| A-B | 0.61 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.40 | 8.44 | 0.048 | | 0.06 | 0.05 | 0.8 | | 0.12 |
| C-A | 1.83 | | | | | | | | |
| C-B | 0.99 | 9.93 | 0.100 | | 0.14 | 0.14 | 1.7 | | 0.11 |
| A-B | 0.49 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.34 | 8.66 | 0.039 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 0.83 | 10.15 | 0.082 | | 0.11 | 0.09 | 1.4 | | 0.11 |
| A-B | 0.41 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 37.2 | I | 24.8 | I | 4.6 | I | 0.12 | I |
| I | C-A | I | 167.9 | I | 111.9 | I | I | I | I | I |
| I | C-B | I | 90.8 | I | 60.6 | I | 10.2 | I | 0.11 | I |
| I | A-B | I | 45.4 | I | 30.3 | I | I | I | I | I |
| I | A-C | I | 411.6 | I | 274.4 | I | I | I | I | I |
| I | ALL | I | 752.9 | I | 501.9 | I | 14.8 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2015

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 3.55 | 5.32 | 3.55 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.33 | 3.49 | 2.33 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.060 | 0.940 | 0.0 | 17.0 | 267.0 | (0.0) | (23.5) | (4.1) |
| | ARM B | 0.083 | 0.000 | 0.917 | 2.0 | 0.0 | 22.0 | (50.0) | (0.0) | (4.1) |
| | ARM C | 0.591 | 0.409 | 0.000 | 110.0 | 76.0 | 0.0 | (10.9) | (13.2) | (0.0) |

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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 Scenario 5 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.82 | 0.034 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.95 | 10.50 | 0.091 | | 0.00 | 0.10 | 1.4 | | 0.10 |
| A-B | 0.21 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.65 | 0.042 | | 0.04 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.14 | 10.31 | 0.110 | | 0.10 | 0.12 | 1.8 | | 0.11 |
| A-B | 0.25 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 8.40 | 0.052 | | 0.04 | 0.05 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.39 | 10.04 | 0.139 | | 0.12 | 0.16 | 2.3 | | 0.12 |
| A-B | 0.31 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 8.40 | 0.052 | | 0.05 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.39 | 10.04 | 0.139 | | 0.16 | 0.16 | 2.4 | | 0.12 |
| A-B | 0.31 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.65 | 0.042 | | 0.06 | 0.04 | 0.7 | | 0.12 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.14 | 10.31 | 0.110 | | 0.16 | 0.16 | 1.9 | | 0.11 |
| A-B | 0.25 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.30 | 8.82 | 0.034 | | 0.04 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.95 | 10.50 | 0.091 | | 0.13 | 0.10 | 1.5 | | 0.10 |
| A-B | 0.21 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------------|---------|---|--------------|-----------|------------------------|-----------|
| I | I | I | (VEH) | (VEH/H) | I | * DELAY * | I | * DELAY * | I |
| I | I | I | | | I | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| I | B-AC | I | 33.0 | 22.0 | I | 4.0 | 0.12 | 4.0 | 0.12 |
| I | C-A | I | 151.4 | 100.9 | I | | | | |
| I | C-B | I | 104.6 | 69.7 | I | 11.5 | 0.11 | 11.5 | 0.11 |
| I | A-B | I | 23.4 | 15.6 | I | | | | |
| I | A-C | I | 367.5 | 245.0 | I | | | | |
| I | ALL | I | 680.0 | 453.3 | I | 15.5 | 0.02 | 15.5 | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2028

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 3.97 | 5.96 | 3.97 |
| B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| C | 15.00 | 45.00 | 75.00 | 2.53 | 3.79 | 2.53 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.060 | 0.940 | 0.0 | 19.0 | 299.0 | (0.0) | (21.1) | (4.0) |
| | ARM B | 0.074 | 0.000 | 0.926 | 2.0 | 0.0 | 25.0 | (50.0) | (0.0) | (46.9) |
| | ARM C | 0.604 | 0.396 | 0.000 | 122.0 | 80.0 | 0.0 | (10.7) | (14.4) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 5 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.34 | 8.67 | 0.039 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 1.00 | 10.27 | 0.098 | | 0.00 | 0.11 | 1.6 | | 0.11 |
| A-B | 0.24 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.40 | 8.47 | 0.048 | | 0.04 | 0.05 | 0.7 | | 0.12 |
| C-A | 1.83 | | | | | | | | |
| C-B | 1.20 | 10.06 | 0.119 | | 0.11 | 0.13 | 2.0 | | 0.11 |
| A-B | 0.28 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.50 | 8.20 | 0.060 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.47 | 9.76 | 0.150 | | 0.13 | 0.18 | 2.6 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.50 | 8.20 | 0.060 | | 0.06 | 0.06 | 1.0 | | 0.13 |
| C-A | 2.24 | | | | | | | | |
| C-B | 1.47 | 9.76 | 0.150 | | 0.18 | 0.18 | 2.6 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.49 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.40 | 8.47 | 0.048 | | 0.06 | 0.05 | 0.8 | | 0.12 |
| C-A | 1.83 | | | | | | | | |
| C-B | 1.20 | 10.06 | 0.119 | | 0.18 | 0.18 | 2.1 | | 0.11 |
| A-B | 0.28 | | | | | | | | |
| A-C | 4.48 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.34 | 8.67 | 0.039 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.53 | | | | | | | | |
| C-B | 1.00 | 10.27 | 0.098 | | 0.14 | 0.11 | 1.7 | | 0.11 |
| A-B | 0.24 | | | | | | | | |
| A-C | 3.75 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 37.2 | 24.8 | 4.6 |
| C-A | 167.9 | 111.9 | 0.12 |
| C-B | 110.1 | 73.4 | 12.5 |
| A-B | 26.2 | 17.4 | |
| A-C | 411.6 | 274.4 | |
| ALL | 752.9 | 501.9 | 17.1 |

* 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 =====

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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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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
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Run with file:-
"W:\Projects\6301 - Drehid MBT Facility\05-Design\01-Calculations\Traffic\Picady\AM Peak Check Scen 2.vpi"
(drive-on-the-left) at 14:49:47 on Wednesday, 30 May 2012

RUN INFORMATION

RUN TITLE: 6301-MBT-AM Turning Check Scen 2
LOCATION:
DATE: 10/07/08
CLIENT:
ENUMERATOR: Brendan Ward [DUB-35LJ52J-BW]
JOB NUMBER: 6301
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS R403 West
ARM B IS Entrance
ARM C IS R403 East

STREAM LABELLING CONVENTION

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

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

ETC.

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 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

.SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream C-A | Opposing Stream C-A | Slope For Stream C-B | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | | 0.50 | | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2029

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | I | 15.00 | I | 45.00 | I | 75.00 | I | 4.29 | I | 6.43 | I | 4.29 | I |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 0.30 | I | 0.45 | I | 0.30 | I |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 2.00 | I | 3.00 | I | 2.00 | I |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.122 | 0.878 |
| | | 0.0 | 42.0 | 301.0 |
| | | (0.0) | (16.7) | (4.0) |
| | ARM B | 0.167 | 0.000 | 0.833 |
| | | 4.0 | 0.0 | 20.0 |
| | | (100.0) | (0.0) | (40.0) |
| | ARM C | 0.769 | 0.231 | 0.000 |
| | | 123.0 | 37.0 | 0.0 |
| | | (10.6) | (21.6) | (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 DEMAND SET Scenario 1 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.23 | 0.037 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.46 | 9.58 | 0.048 | | 0.00 | 0.06 | 0.7 | | 0.11 |
| A-B | 0.53 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.02 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.55 | 9.36 | 0.059 | | 0.05 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.63 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.73 | 0.057 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.68 | 9.05 | 0.075 | | 0.06 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.77 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.73 | 0.057 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.68 | 9.05 | 0.075 | | 0.08 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.77 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.02 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.55 | 9.36 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.11 |
| A-B | 0.63 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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-AC | 0.30 | 8.23 | 0.037 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.46 | 9.58 | 0.048 | | 0.06 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.53 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 33.0 | 22.0 | 4.3 |
| C-A | 169.3 | 112.9 | 5.8 |
| C-B | 50.9 | 34.0 | 0.11 |
| A-B | 57.8 | 38.5 | |
| A-C | 414.3 | 276.2 | |
| ALL | 725.4 | 483.6 | 10.1 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 1 - 2035

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.47 | 6.71 | 4.47 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.09 | 3.13 | 2.09 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|----------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.120 | 0.880 |
| | | (0.0) | (16.3) | (3.8) |
| | ARM B | 0.167 | 0.000 | 0.833 |
| | | (4.0) | (0.0) | (20.8) |
| | ARM C | 0.772 | 0.228 | 0.000 |
| | | (129.0) | (38.0) | (0.0) |
| | | (10.1) | (21.1) | (0.0) |

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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 Scenario 1 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.18 | 0.037 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.48 | 9.57 | 0.050 | | 0.00 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.54 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 7.96 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.57 | 9.34 | 0.061 | | 0.05 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.66 | 0.058 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.70 | 9.02 | 0.077 | | 0.06 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.79 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.66 | 0.058 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.70 | 9.02 | 0.077 | | 0.08 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.79 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 7.96 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.57 | 9.34 | 0.061 | | 0.08 | 0.08 | 1.0 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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-AC | 0.30 | 8.18 | 0.037 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.48 | 9.57 | 0.050 | | 0.07 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.54 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 33.0 | 22.0 | 4.4 |
| C-A | 177.6 | 118.4 | 6.0 |
| C-B | 52.3 | 34.9 | 0.11 |
| A-B | 59.2 | 39.5 | |
| A-C | 433.6 | 289.0 | |
| ALL | 755.7 | 503.8 | 10.3 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2029

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.19 | 6.28 | 4.19 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.10 | 3.15 | 2.10 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|--------|-------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.101 | 0.899 |
| | | 0.0 | 34.0 | 301.0 |
| | (0.0) | (17.6) | (4.0) | |
| | ARM B | 0.125 | 0.000 | 0.875 |
| | | 3.0 | 0.0 | 21.0 |
| | (100.0) | (0.0) | (4.0) | |
| | ARM C | 0.732 | 0.268 | 0.000 |
| | | 123.0 | 45.0 | 0.0 |
| | (10.6) | (20.0) | (0.0) | |
| | | | | |

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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 Scenario 2 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.32 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.56 | 9.73 | 0.058 | | 0.00 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.12 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.67 | 9.52 | 0.071 | | 0.06 | 0.08 | 1.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.83 | 9.22 | 0.090 | | 0.08 | 0.10 | 1.4 | | 0.12 |
| A-B | 0.62 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.83 | 9.22 | 0.090 | | 0.10 | 0.10 | 1.5 | | 0.12 |
| A-B | 0.62 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.12 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.67 | 9.52 | 0.071 | | 0.10 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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-AC | 0.30 | 8.32 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.56 | 9.73 | 0.058 | | 0.08 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|---|-------|--------------|------|-------|------------------------|---|------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I | I | | | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.3 | I | 0.13 | I | 4.3 | I | 0.13 | I |
| I | C-A | I | 169.3 | I | 112.9 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 61.9 | I | 41.3 | I | 7.0 | I | 0.11 | I | 7.0 | I | 0.11 | I |
| I | A-B | I | 46.8 | I | 31.2 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 414.3 | I | 276.2 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 725.4 | I | 483.6 | I | 11.3 | I | 0.02 | I | 11.3 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | I |

| 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 | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2035

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 |
|-----|---|------------------------|--------------------|------------------------------------|----------------|------------|
| A | 15.00 | 45.00 | 75.00 | 4.38 | 6.56 | 4.38 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.19 | 3.28 | 2.19 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.100 | 0.900 |
| | | 0.0 | 35.0 | 315.0 |
| | | (0.0) | (17.1) | (3.8) |
| | ARM B | 0.125 | 0.000 | 0.875 |
| | | 3.0 | 0.0 | 21.0 |
| | | (100.0) | (0.0) | (4.9) |
| ARM C | 0.737 | 0.263 | 0.000 | |
| | 129.0 | 46.0 | 0.0 | |
| | (10.1) | (19.6) | (0.0) | |

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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 Scenario 2 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.28 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.58 | 9.72 | 0.059 | | 0.00 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.07 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.69 | 9.49 | 0.073 | | 0.06 | 0.08 | 1.1 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.77 | 0.057 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.84 | 9.18 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.12 |
| A-B | 0.64 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.77 | 0.057 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.84 | 9.18 | 0.092 | | 0.10 | 0.10 | 1.5 | | 0.12 |
| A-B | 0.64 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.07 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.69 | 9.49 | 0.073 | | 0.10 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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-AC | 0.30 | 8.28 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.58 | 9.72 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|-------|-----------|--------------|-----------|-------|------------------------|-------|-----------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | | | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.3 | I | 0.13 | I | 4.3 | I | 0.13 | I |
| I | C-A | I | 177.6 | I | 118.4 | I | | I | | I | | I | | I |
| I | C-B | I | 63.3 | I | 42.2 | I | 7.2 | I | 0.11 | I | 7.2 | I | 0.11 | I |
| I | A-B | I | 48.2 | I | 32.1 | I | | I | | I | | I | | I |
| I | A-C | I | 433.6 | I | 289.0 | I | | I | | I | | I | | I |
| I | ALL | I | 755.7 | I | 503.8 | I | 11.5 | I | 0.02 | I | 11.5 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2029

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 |
|-----|---|------------------------|--------------------|------------------------------------|----------------|------------|
| A | 15.00 | 45.00 | 75.00 | 4.15 | 6.23 | 4.15 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.14 | 3.21 | 2.14 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.093 | 0.907 |
| | | 0.0 | 31.0 | 301.0 |
| | | (0.0) | (19.4) | (4.0) |
| | ARM B | 0.125 | 0.000 | 0.875 |
| | | 3.0 | 0.0 | 21.0 |
| | | (100.0) | (0.0) | (4.0) |
| | ARM C | 0.719 | 0.281 | 0.000 |
| | | 123.0 | 48.0 | 0.0 |
| | | (10.6) | (18.8) | (0.0) |
| | | | | |
| | | | | |
| | | | | |

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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 Scenario 3 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.33 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.60 | 9.84 | 0.061 | | 0.00 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.39 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.12 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.72 | 9.62 | 0.075 | | 0.06 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.46 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.88 | 9.32 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.12 |
| A-B | 0.57 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.88 | 9.32 | 0.094 | | 0.10 | 0.10 | 1.6 | | 0.12 |
| A-B | 0.57 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.12 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.72 | 9.62 | 0.075 | | 0.10 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.46 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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-AC | 0.30 | 8.32 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.60 | 9.84 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.39 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | |
| I | I | I | I | I | I | I | I | (MIN/VEH) | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.3 | I | 0.13 |
| I | C-A | I | 169.3 | I | 112.9 | I | I | I | I |
| I | C-B | I | 66.1 | I | 44.0 | I | 7.4 | I | 0.11 |
| I | A-B | I | 42.7 | I | 28.4 | I | I | I | I |
| I | A-C | I | 414.3 | I | 276.2 | I | I | I | I |
| I | ALL | I | 725.4 | I | 483.6 | I | 11.7 | I | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream |
| I | I | I | I | I | I | I | I | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | |
| | | | | | | | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2035

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.34 | 6.51 | 4.34 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.22 | 3.34 | 2.22 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|----------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.092 | 0.908 |
| | | (0.0) | (18.8) | (3.8) |
| | ARM B | 0.125 | 0.000 | 0.875 |
| | | (3.0) | (0.0) | (21.9) |
| | ARM C | 0.725 | 0.275 | 0.000 |
| | | (129.0) | (49.0) | (0.0) |
| | | (10.1) | (18.4) | (0.0) |

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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 Scenario 3 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.28 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.61 | 9.83 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.07 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.73 | 9.60 | 0.076 | | 0.07 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.48 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.77 | 0.057 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.90 | 9.29 | 0.097 | | 0.08 | 0.11 | 1.6 | | 0.12 |
| A-B | 0.59 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.77 | 0.057 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.90 | 9.29 | 0.097 | | 0.11 | 0.11 | 1.6 | | 0.12 |
| A-B | 0.59 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.07 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.73 | 9.60 | 0.076 | | 0.11 | 0.08 | 1.3 | | 0.11 |
| A-B | 0.48 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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-AC | 0.30 | 8.28 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.61 | 9.83 | 0.063 | | 0.08 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 33.0 | 22.0 | 4.3 |
| C-A | 177.6 | 118.4 | 7.6 |
| C-B | 67.4 | 45.0 | 0.11 |
| A-B | 44.0 | 29.4 | |
| A-C | 433.6 | 289.0 | |
| ALL | 755.7 | 503.8 | 11.9 |

* 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 JOB

.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 |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2029

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.10 | 6.15 | 4.10 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.19 | 3.28 | 2.19 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.082 | 0.918 | 0.0 | 27.0 | 301.0 | (0.0) | (18.5) | (4.0) |
| | ARM B | 0.125 | 0.000 | 0.875 | 3.0 | 0.0 | 21.0 | (66.7) | (0.0) | (4.0) |
| | ARM C | 0.703 | 0.297 | 0.000 | 123.0 | 52.0 | 0.0 | (10.6) | (19.2) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 4 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.38 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.65 | 9.82 | 0.066 | | 0.00 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.34 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.18 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.78 | 9.61 | 0.081 | | 0.07 | 0.09 | 1.3 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.90 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.95 | 9.32 | 0.102 | | 0.09 | 0.11 | 1.7 | | 0.12 |
| A-B | 0.50 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.90 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.26 | | | | | | | | |
| C-B | 0.95 | 9.32 | 0.102 | | 0.11 | 0.11 | 1.7 | | 0.12 |
| A-B | 0.50 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.18 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.78 | 9.61 | 0.081 | | 0.11 | 0.11 | 1.4 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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-AC | 0.30 | 8.38 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.65 | 9.82 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.11 |
| A-B | 0.34 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|-------|-----------|--------------|-----------|-------|------------------------|-------|-----------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | | | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.2 | I | 0.13 | I | 4.2 | I | 0.13 | I |
| I | C-A | I | 169.3 | I | 112.9 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 71.6 | I | 47.7 | I | 8.1 | I | 0.11 | I | 8.1 | I | 0.11 | I |
| I | A-B | I | 37.2 | I | 24.8 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 414.3 | I | 276.2 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 725.4 | I | 483.6 | I | 12.4 | I | 0.02 | I | 12.4 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | I |

| 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 | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2035

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.29 | 6.43 | 4.29 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.28 | 3.41 | 2.28 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.082 | 0.918 | 0.0 | 28.0 | 315.0 | (0.0) | (17.9) | (3.8) |
| | ARM B | 0.125 | 0.000 | 0.875 | 3.0 | 0.0 | 21.0 | (66.7) | (0.0) | (4.0) |
| | ARM C | 0.709 | 0.291 | 0.000 | 129.0 | 53.0 | 0.0 | (10.1) | (18.9) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 4 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.34 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.67 | 9.80 | 0.068 | | 0.00 | 0.07 | 1.1 | | 0.11 |
| A-B | 0.35 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.13 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.79 | 9.58 | 0.083 | | 0.07 | 0.09 | 1.3 | | 0.11 |
| A-B | 0.42 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.97 | 9.27 | 0.105 | | 0.09 | 0.12 | 1.7 | | 0.12 |
| A-B | 0.51 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.84 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.37 | | | | | | | | |
| C-B | 0.97 | 9.27 | 0.105 | | 0.12 | 0.12 | 1.7 | | 0.12 |
| A-B | 0.51 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.13 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.79 | 9.58 | 0.083 | | 0.12 | 0.12 | 1.4 | | 0.11 |
| A-B | 0.42 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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-AC | 0.30 | 8.34 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.67 | 9.80 | 0.068 | | 0.09 | 0.07 | 1.1 | | 0.11 |
| A-B | 0.35 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|---|-------|--------------|------|-------|------------------------|---|------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I | I | | | |
| I | B-AC | I | 33.0 | I | 22.0 | I | 4.3 | I | 0.13 | I | 4.3 | I | 0.13 | I |
| I | C-A | I | 177.6 | I | 118.4 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 73.0 | I | 48.6 | I | 8.3 | I | 0.11 | I | 8.3 | I | 0.11 | I |
| I | A-B | I | 38.5 | I | 25.7 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 433.6 | I | 289.0 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 755.7 | I | 503.8 | I | 12.6 | I | 0.02 | I | 12.6 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | I |

| 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 | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2029

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.00 | 6.00 | 4.00 |
| B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| C | 15.00 | 45.00 | 75.00 | 2.29 | 3.43 | 2.29 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.059 | 0.941 | 0.0 | 19.0 | 301.0 | (0.0) | (21.1) | (4.0) |
| | ARM B | 0.083 | 0.000 | 0.917 | 2.0 | 0.0 | 22.0 | (50.0) | (0.0) | (50.0) |
| | ARM C | 0.672 | 0.328 | 0.000 | 123.0 | 60.0 | 0.0 | (10.6) | (18.3) | (0.0) |

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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 Scenario 5 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.49 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.75 | 9.93 | 0.076 | | 0.00 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.24 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.30 | 0.043 | | 0.04 | 0.04 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.90 | 9.72 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.11 |
| A-B | 0.28 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 8.03 | 0.055 | | 0.04 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.26 | | | | | | | | |
| C-B | 1.10 | 9.43 | 0.117 | | 0.10 | 0.13 | 1.9 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 8.03 | 0.055 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.26 | | | | | | | | |
| C-B | 1.10 | 9.43 | 0.117 | | 0.13 | 0.13 | 2.0 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.52 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.30 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.84 | | | | | | | | |
| C-B | 0.90 | 9.72 | 0.092 | | 0.13 | 0.13 | 1.6 | | 0.11 |
| A-B | 0.28 | | | | | | | | |
| A-C | 4.51 | | | | | | | | |

| 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-AC | 0.30 | 8.49 | 0.035 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.54 | | | | | | | | |
| C-B | 0.75 | 9.93 | 0.076 | | 0.10 | 0.08 | 1.3 | | 0.11 |
| A-B | 0.24 | | | | | | | | |
| A-C | 3.78 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 33.0 | 22.0 | 4.2 |
| C-A | 169.3 | 112.9 | 9.4 |
| C-B | 82.6 | 55.1 | 17.4 |
| A-B | 26.2 | 17.4 | 414.3 |
| A-C | 414.3 | 276.2 | |
| ALL | 725.4 | 483.6 | 13.6 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2035

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.19 | 6.28 | 4.19 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.30 | 0.45 | 0.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.38 | 3.56 | 2.38 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.060 | 0.940 |
| | | 0.0 | 20.0 | 315.0 |
| | | (0.0) | (20.0) | (3.8) |
| | ARM B | 0.083 | 0.000 | 0.917 |
| | | 2.0 | 0.0 | 22.0 |
| | | (50.0) | (0.0) | (50.0) |
| ARM C | 0.679 | 0.321 | 0.000 | |
| | 129.0 | 61.0 | 0.0 | |
| | (10.1) | (18.0) | (0.0) | |

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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 Scenario 5 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.30 | 8.45 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.77 | 9.91 | 0.077 | | 0.00 | 0.08 | 1.2 | | 0.11 |
| A-B | 0.25 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.36 | 8.25 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.91 | 9.69 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.11 |
| A-B | 0.30 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.44 | 7.97 | 0.055 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.37 | | | | | | | | |
| C-B | 1.12 | 9.38 | 0.119 | | 0.10 | 0.13 | 2.0 | | 0.12 |
| A-B | 0.37 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.44 | 7.97 | 0.055 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| C-A | 2.37 | | | | | | | | |
| C-B | 1.12 | 9.38 | 0.119 | | 0.13 | 0.13 | 2.0 | | 0.12 |
| A-B | 0.37 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.36 | 8.25 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.93 | | | | | | | | |
| C-B | 0.91 | 9.69 | 0.094 | | 0.13 | 0.13 | 1.6 | | 0.11 |
| A-B | 0.30 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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-AC | 0.30 | 8.45 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.62 | | | | | | | | |
| C-B | 0.77 | 9.91 | 0.077 | | 0.11 | 0.08 | 1.3 | | 0.11 |
| A-B | 0.25 | | | | | | | | |
| A-C | 3.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 33.0 | 22.0 | 4.2 |
| C-A | 177.6 | 118.4 | 0.13 |
| C-B | 84.0 | 56.0 | 9.6 |
| A-B | 27.5 | 18.4 | |
| A-C | 433.6 | 289.0 | |
| ALL | 755.7 | 503.8 | 13.8 |

* 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 =====

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 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

.SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream A | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|--------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | 0.50 | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2013

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | I | 15.00 | I | 45.00 | I | 75.00 | I | 5.79 | I | 8.68 | I | 5.79 | I |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 0.29 | I | 0.43 | I | 0.29 | I |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 1.79 | I | 2.68 | I | 1.79 | I |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.423 | 0.577 |
| | | 0.0 | 196.0 | 267.0 |
| | | (0.0) | (4.1) | (4.1) |
| | ARM B | 0.261 | 0.000 | 0.739 |
| | | 6.0 | 0.0 | 17.0 |
| | | (83.3) | (0.0) | (41.2) |
| | ARM C | 0.769 | 0.231 | 0.000 |
| | | 110.0 | 33.0 | 0.0 |
| | | (10.9) | (21.2) | (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 DEMAND SET Scenario 1 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.29 | 7.91 | 0.037 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.41 | 9.23 | 0.045 | | 0.00 | 0.05 | 0.7 | | 0.11 |
| A-B | 2.46 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.34 | 7.68 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.14 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.49 | 8.94 | 0.055 | | 0.05 | 0.06 | 0.9 | | 0.12 |
| A-B | 2.94 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.42 | 7.36 | 0.057 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.61 | 8.54 | 0.071 | | 0.06 | 0.08 | 1.1 | | 0.13 |
| A-B | 3.60 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.42 | 7.36 | 0.057 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 0.61 | 8.54 | 0.071 | | 0.08 | 0.08 | 1.1 | | 0.13 |
| A-B | 3.60 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.34 | 7.68 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.14 |
| C-A | 1.65 | | | | | | | | |
| C-B | 0.49 | 8.94 | 0.055 | | 0.08 | 0.06 | 0.9 | | 0.12 |
| A-B | 2.94 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.29 | 7.91 | 0.037 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 0.41 | 9.23 | 0.045 | | 0.06 | 0.05 | 0.7 | | 0.11 |
| A-B | 2.46 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|-------|-----------|--------------|-----------|-------|------------------------|-------|-----------|---|------|---|
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | | | |
| I | B-AC | I | 31.7 | I | 21.1 | I | 4.3 | I | 0.14 | I | 4.3 | I | 0.14 | I |
| I | C-A | I | 151.4 | I | 100.9 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 45.4 | I | 30.3 | I | 5.4 | I | 0.12 | I | 5.4 | I | 0.12 | I |
| I | A-B | I | 269.8 | I | 179.9 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 367.5 | I | 245.0 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 865.8 | I | 577.2 | I | 9.7 | I | 0.01 | I | 9.7 | 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 | 859.54 | | 0.33 | | 0.13 | I |

| 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 | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2013

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 5.05 | 7.58 | 5.05 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.53 | 3.79 | 2.53 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|----------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.339 | 0.661 |
| | | (0.0) | (5.1) | (4.1) |
| | ARM B | 0.217 | 0.000 | 0.783 |
| | | (5.0) | (0.0) | (18.0) |
| | ARM C | 0.545 | 0.455 | 0.000 |
| | | (110.0) | (92.0) | (0.0) |
| | | (10.9) | (8.7) | (0.0) |

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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 Scenario 2 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.29 | 7.98 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.15 | 10.51 | 0.110 | | 0.00 | 0.12 | 1.8 | | 0.11 |
| A-B | 1.72 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.34 | 7.75 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.38 | 10.22 | 0.135 | | 0.12 | 0.15 | 2.3 | | 0.11 |
| A-B | 2.05 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.42 | 7.43 | 0.057 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.69 | 9.82 | 0.172 | | 0.15 | 0.21 | 3.0 | | 0.12 |
| A-B | 2.51 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.42 | 7.43 | 0.057 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 1.69 | 9.82 | 0.172 | | 0.21 | 0.21 | 3.1 | | 0.12 |
| A-B | 2.51 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.34 | 7.75 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.14 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.38 | 10.22 | 0.135 | | 0.21 | 0.21 | 2.4 | | 0.11 |
| A-B | 2.05 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.29 | 7.98 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.15 | 10.51 | 0.110 | | 0.16 | 0.12 | 1.9 | | 0.11 |
| A-B | 1.72 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.1 |
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.2 |
| 08.45 | 0.2 |
| 09.00 | 0.1 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|-------|-----------|--------------|-----------|-------|------------------------|-------|-----------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | | | |
| I | B-AC | I | 31.7 | I | 21.1 | I | 4.3 | I | 0.14 | I | 4.3 | I | 0.14 | I |
| I | C-A | I | 151.4 | I | 100.9 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 126.6 | I | 84.4 | I | 14.5 | I | 0.11 | I | 14.5 | I | 0.11 | I |
| I | A-B | I | 188.6 | I | 125.7 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 367.5 | I | 245.0 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 865.8 | I | 577.2 | I | 18.8 | I | 0.02 | I | 18.8 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2013

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | 4.68 | 7.01 | 4.68 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.90 | 4.35 | 2.90 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|----------|----------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.286 | 0.714 |
| | | (0.0) | (5.6) | (4.1) |
| | ARM B | 0.174 | 0.000 | 0.826 |
| | | (4.0) | (0.0) | (19.0) |
| | ARM C | 0.474 | 0.526 | 0.000 |
| | | (110.0) | (122.0) | (0.0) |
| | | (10.9) | (7.4) | (0.0) |

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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 Scenario 3 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.29 | 8.08 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.53 | 10.74 | 0.143 | | 0.00 | 0.16 | 2.4 | | 0.11 |
| A-B | 1.34 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.34 | 7.86 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.83 | 10.47 | 0.175 | | 0.16 | 0.21 | 3.1 | | 0.12 |
| A-B | 1.60 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.42 | 7.55 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 2.24 | 10.10 | 0.222 | | 0.21 | 0.28 | 4.1 | | 0.13 |
| A-B | 1.96 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.42 | 7.55 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 2.24 | 10.10 | 0.222 | | 0.28 | 0.28 | 4.2 | | 0.13 |
| A-B | 1.96 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.34 | 7.86 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 1.83 | 10.47 | 0.175 | | 0.28 | 0.28 | 3.3 | | 0.12 |
| A-B | 1.60 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.29 | 8.08 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.53 | 10.74 | 0.143 | | 0.21 | 0.17 | 2.6 | | 0.11 |
| A-B | 1.34 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.2 |
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.3 |
| 08.45 | 0.2 |
| 09.00 | 0.2 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------------|---------|---|--------------|-----------|------------------------|-----------|
| I | I | I | (VEH) | (VEH/H) | I | * DELAY * | I | * DELAY * | I |
| I | I | I | | | I | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| I | B-AC | I | 31.7 | 21.1 | I | 4.2 | 0.13 | 4.2 | 0.13 |
| I | C-A | I | 151.4 | 100.9 | I | | | | |
| I | C-B | I | 167.9 | 111.9 | I | 19.7 | 0.12 | 19.7 | 0.12 |
| I | A-B | I | 147.3 | 98.2 | I | | | | |
| I | A-C | I | 367.5 | 245.0 | I | | | | |
| I | ALL | I | 865.8 | 577.2 | I | 23.9 | 0.03 | 23.9 | 0.03 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2013

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 4.29 | 6.43 | 4.29 |
| B | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| C | 15.00 | 45.00 | 75.00 | 3.29 | 4.93 | 3.29 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|--------|---------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.222 | 0.778 | 0.0 | 76.0 | 267.0 | (0.0) | (6.6) | (4.1) |
| | ARM B | 0.130 | 0.000 | 0.870 | 3.0 | 0.0 | 20.0 | (66.7) | (0.0) | (50.0) |
| | ARM C | 0.418 | 0.582 | 0.000 | 110.0 | 153.0 | 0.0 | (10.9) | (6.5) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 4 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.29 | 8.21 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.92 | 10.95 | 0.175 | | 0.00 | 0.21 | 3.1 | | 0.11 |
| A-B | 0.95 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.34 | 8.00 | 0.043 | | 0.04 | 0.04 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 2.29 | 10.70 | 0.214 | | 0.21 | 0.27 | 4.0 | | 0.12 |
| A-B | 1.14 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.42 | 7.71 | 0.055 | | 0.04 | 0.06 | 0.8 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 2.81 | 10.35 | 0.271 | | 0.27 | 0.37 | 5.4 | | 0.13 |
| A-B | 1.39 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.42 | 7.71 | 0.055 | | 0.06 | 0.06 | 0.9 | | 0.14 |
| C-A | 2.02 | | | | | | | | |
| C-B | 2.81 | 10.35 | 0.271 | | 0.37 | 0.37 | 5.5 | | 0.13 |
| A-B | 1.39 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.34 | 8.00 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 2.29 | 10.70 | 0.214 | | 0.37 | 0.38 | 4.2 | | 0.12 |
| A-B | 1.14 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.29 | 8.21 | 0.035 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.38 | | | | | | | | |
| C-B | 1.92 | 10.95 | 0.175 | | 0.28 | 0.21 | 3.3 | | 0.11 |
| A-B | 0.95 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.2 |
| 08.00 | 0.3 |
| 08.15 | 0.4 |
| 08.30 | 0.4 |
| 08.45 | 0.3 |
| 09.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) |
| I | B-AC | I | 31.7 | I | 21.1 | I | 4.1 | I | 0.13 |
| I | C-A | I | 151.4 | I | 100.9 | I | | I | |
| I | C-B | I | 210.6 | I | 140.4 | I | 25.4 | I | 0.12 |
| I | A-B | I | 104.6 | I | 69.7 | I | | I | |
| I | A-C | I | 367.5 | I | 245.0 | I | | I | |
| I | ALL | I | 865.8 | I | 577.2 | I | 29.6 | I | 0.03 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2013

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 3.55 | 5.32 | 3.55 |
| B | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| C | 15.00 | 45.00 | 75.00 | 4.03 | 6.04 | 4.03 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 07.30 - 09.00 | ARM A | 0.000 | 0.060 | 0.940 | 0.0 | 17.0 | 267.0 | (0.0) | (23.5) | (4.1) |
| | ARM B | 0.087 | 0.000 | 0.913 | 2.0 | 0.0 | 21.0 | (50.0) | (0.0) | (5.2) |
| | ARM C | 0.342 | 0.658 | 0.000 | 110.0 | 212.0 | 0.0 | (10.9) | (5.2) | (0.0) |

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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 Scenario 5 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.30-07.45 | | | | | | | | | |
| B-AC | 0.29 | 8.38 | 0.034 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 2.66 | 11.30 | 0.235 | | 0.00 | 0.30 | 4.4 | | 0.12 |
| A-B | 0.21 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

| 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) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.34 | 8.19 | 0.042 | | 0.04 | 0.04 | 0.6 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 3.18 | 11.09 | 0.286 | | 0.30 | 0.40 | 5.8 | | 0.13 |
| A-B | 0.25 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.42 | 7.92 | 0.053 | | 0.04 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 3.89 | 10.80 | 0.360 | | 0.40 | 0.55 | 8.1 | | 0.14 |
| A-B | 0.31 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.42 | 7.92 | 0.053 | | 0.06 | 0.06 | 0.8 | | 0.13 |
| C-A | 2.02 | | | | | | | | |
| C-B | 3.89 | 10.80 | 0.360 | | 0.55 | 0.56 | 8.4 | | 0.14 |
| A-B | 0.31 | | | | | | | | |
| A-C | 4.90 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.34 | 8.19 | 0.042 | | 0.06 | 0.04 | 0.7 | | 0.13 |
| C-A | 1.65 | | | | | | | | |
| C-B | 3.18 | 11.09 | 0.286 | | 0.56 | 0.56 | 6.3 | | 0.13 |
| A-B | 0.25 | | | | | | | | |
| A-C | 4.00 | | | | | | | | |

| 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-AC | 0.29 | 8.38 | 0.034 | | 0.04 | 0.04 | 0.6 | | 0.12 |
| C-A | 1.38 | | | | | | | | |
| C-B | 2.66 | 11.30 | 0.235 | | 0.41 | 0.31 | 4.8 | | 0.12 |
| A-B | 0.21 | | | | | | | | |
| A-C | 3.35 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.0 |
| 08.00 | 0.0 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.0 |
| 09.00 | 0.0 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 07.45 | 0.3 |
| 08.00 | 0.4 |
| 08.15 | 0.6 |
| 08.30 | 0.6 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |

*
*

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN) |
| B-AC | 31.7 | 4.0 | 4.0 |
| C-A | 151.4 | | |
| C-B | 291.8 | 37.7 | 37.7 |
| A-B | 23.4 | | |
| A-C | 367.5 | | |
| ALL | 865.8 | 41.7 | 41.7 |

* 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 =====

[Printed at 16:05:36 on 20/03/2012]

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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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Run with file:-
"W:\Projects\6301 - Drehid MBT Facility\05-Design\01-Calculations\Traffic\Picady\PM Peak Check Scen 1.vpi"
(drive-on-the-left) at 14:57:07 on Wednesday, 30 May 2012

RUN INFORMATION

RUN TITLE: 6301-MBT-PM Turning Check Scen 1
LOCATION:
DATE: 10/07/08
CLIENT:
ENUMERATOR: Brendan Ward [DUB-35LJ52J-BW]
JOB NUMBER: 6301
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS R403 West
ARM B IS Entrance
ARM C IS R403 East

STREAM LABELLING CONVENTION

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

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 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

.SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream C-A | Opposing Stream C-A | Slope For Stream C-B | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | | 0.50 | | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2015

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | I | 15.00 | I | 45.00 | I | 75.00 | I | 2.55 | I | 3.82 | I | 2.55 | I |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 0.86 | I | 1.29 | I | 0.86 | I |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 3.29 | I | 4.93 | I | 3.29 | I |

| | | TURNING PROPORTIONS | | | | | |
|---------------|---------|-------------------------|---------|--------|--|--|--|
| | | TURNING COUNTS (VEH/HR) | | | | | |
| | | (PERCENTAGE OF H.V.S) | | | | | |
| TIME | FROM/TO | ARM A | ARM B | ARM C | | | |
| 16.30 - 18.00 | | | | | | | |
| | ARM A | 0.000 | 0.172 | 0.828 | | | |
| | | 0.0 | 35.0 | 169.0 | | | |
| | | (0.0) | (8.6) | (4.7) | | | |
| | ARM B | 0.783 | 0.000 | 0.217 | | | |
| | | 54.0 | 0.0 | 15.0 | | | |
| | | (7.4) | (0.0) | (6.7) | | | |
| | ARM C | 0.989 | 0.011 | 0.000 | | | |
| | | 260.0 | 3.0 | 0.0 | | | |
| | | (3.1) | (33.3) | (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 DEMAND SET Scenario 1 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.87 | 10.81 | 0.080 | | 0.00 | 0.09 | 1.3 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.04 | 9.16 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 1.03 | 10.54 | 0.098 | | 0.09 | 0.11 | 1.6 | | 0.11 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.04 | 9.04 | 0.005 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 1.27 | 10.16 | 0.125 | | 0.11 | 0.14 | 2.1 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.06 | 8.87 | 0.006 | | 0.00 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.27 | 10.16 | 0.125 | | 0.14 | 0.14 | 2.1 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.06 | 8.87 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.03 | 10.54 | 0.098 | | 0.14 | 0.11 | 1.7 | | 0.11 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.04 | 9.04 | 0.005 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 0.87 | 10.81 | 0.080 | | 0.11 | 0.09 | 1.3 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.04 | 9.16 | 0.004 | | 0.01 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 95.0 | 63.3 | 10.1 |
| C-A | 357.9 | 238.6 | 0.11 |
| C-B | 4.1 | 2.8 | 0.5 |
| A-B | 48.2 | 32.1 | |
| A-C | 232.6 | 155.1 | |
| ALL | 737.8 | 491.8 | 10.5 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

For inspection purposes only. Consent of copyright owner required for any other use.

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

Demand set: Scenario 1 - 2028

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.81 | 4.22 | 2.81 |
| B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| C | 15.00 | 45.00 | 75.00 | 3.67 | 5.51 | 3.67 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.156 | 0.844 | 0.0 | 35.0 | 190.0 | (0.0) | (8.6) | (4.7) |
| | ARM B | 0.767 | 0.000 | 0.233 | 56.0 | 0.0 | 17.0 | (7.1) | (0.0) | (0.9) |
| | ARM C | 0.990 | 0.010 | 0.000 | 291.0 | 3.0 | 0.0 | (3.1) | (33.3) | (0.0) |

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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 Scenario 1 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.92 | 10.72 | 0.085 | | 0.00 | 0.09 | 1.4 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.04 | 9.09 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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-AC | 1.09 | 10.42 | 0.105 | | 0.09 | 0.12 | 1.7 | | 0.11 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.04 | 8.96 | 0.005 | | 0.00 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 1.34 | 10.00 | 0.134 | | 0.12 | 0.15 | 2.3 | | 0.12 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.06 | 8.78 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.34 | 10.00 | 0.134 | | 0.15 | 0.15 | 2.3 | | 0.12 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.06 | 8.78 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.64 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.09 | 10.42 | 0.105 | | 0.15 | 0.12 | 1.8 | | 0.11 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.04 | 8.96 | 0.005 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.52 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 0.92 | 10.72 | 0.085 | | 0.12 | 0.09 | 1.4 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.04 | 9.09 | 0.004 | | 0.01 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.44 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.2 |
| 17.30 | 0.2 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 100.5 | 67.0 | 10.9 |
| C-A | 400.5 | 267.0 | 0.11 |
| C-B | 4.1 | 2.8 | 0.11 |
| A-B | 48.2 | 32.1 | |
| A-C | 261.5 | 174.3 | |
| ALL | 814.8 | 543.2 | 11.3 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2015

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|-------|---|--|--|------------------------------------|---------------------------------------|-----------------------------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.40 | 3.60 | 2.40 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.86 | 1.29 | 0.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.44 | 5.16 | 3.44 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.120 | 0.880 |
| | | (0.0) | (8.7) | (4.7) |
| | ARM B | 0.580 | 0.000 | 0.420 |
| | | (7.5) | (0.0) | (6.9) |
| | ARM C | 0.945 | 0.055 | 0.000 |
| | | (3.1) | (13.3) | (0.0) |

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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 Scenario 2 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.87 | 11.20 | 0.077 | | 0.00 | 0.08 | 1.2 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.19 | 10.82 | 0.017 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 1.03 | 10.94 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.22 | 10.68 | 0.021 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 1.27 | 10.59 | 0.120 | | 0.10 | 0.13 | 2.0 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.28 | 10.50 | 0.026 | | 0.02 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.27 | 10.59 | 0.120 | | 0.13 | 0.14 | 2.0 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.28 | 10.50 | 0.026 | | 0.03 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.03 | 10.94 | 0.094 | | 0.14 | 0.11 | 1.6 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.22 | 10.68 | 0.021 | | 0.03 | 0.03 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 0.87 | 11.19 | 0.077 | | 0.11 | 0.08 | 1.3 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.19 | 10.82 | 0.017 | | 0.02 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) |
| I | B-AC | I | 95.0 | I | 63.3 | I | 9.6 | I | 0.10 |
| I | C-A | I | 357.9 | I | 238.6 | I | I | I | I |
| I | C-B | I | 20.6 | I | 13.8 | I | 2.0 | I | 0.10 |
| I | A-B | I | 31.7 | I | 21.1 | I | I | I | I |
| I | A-C | I | 232.6 | I | 155.1 | I | I | I | I |
| I | ALL | I | 737.8 | I | 491.8 | I | 11.6 | I | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2028

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.66 | 3.99 | 2.66 |
| B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| C | 15.00 | 45.00 | 75.00 | 3.83 | 5.74 | 3.83 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|--|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | |
| 16.30 - 18.00 | ARM A | 0.000 | 0.108 | 0.892 | 0.0 | 23.0 | 190.0 | (0.0) | (8.7) | (4.7) | |
| | ARM B | 0.575 | 0.000 | 0.425 | 42.0 | 0.0 | 31.0 | (7.1) | (0.0) | (6.5) | |
| | ARM C | 0.951 | 0.049 | 0.000 | 291.0 | 15.0 | 0.0 | (3.1) | (13.3) | (0.0) | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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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 Scenario 2 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.92 | 11.10 | 0.083 | | 0.00 | 0.09 | 1.3 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.19 | 10.74 | 0.018 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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-AC | 1.09 | 10.82 | 0.101 | | 0.09 | 0.11 | 1.6 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.22 | 10.60 | 0.021 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 1.34 | 10.42 | 0.129 | | 0.11 | 0.15 | 2.2 | | 0.11 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.28 | 10.40 | 0.026 | | 0.02 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.34 | 10.42 | 0.129 | | 0.15 | 0.15 | 2.2 | | 0.11 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.28 | 10.40 | 0.026 | | 0.03 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.09 | 10.81 | 0.101 | | 0.15 | 0.11 | 1.7 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.22 | 10.60 | 0.021 | | 0.03 | 0.03 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 0.92 | 11.10 | 0.083 | | 0.11 | 0.09 | 1.4 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.19 | 10.74 | 0.018 | | 0.02 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 100.5 | 67.0 | 10.4 |
| C-A | 400.5 | 267.0 | 0.10 |
| C-B | 20.6 | 13.8 | 2.0 |
| A-B | 31.7 | 21.1 | |
| A-C | 261.5 | 174.3 | |
| ALL | 814.8 | 543.2 | 12.4 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2015

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.34 | 3.51 | 2.34 |
| B | 15.00 | 45.00 | 75.00 | 0.86 | 1.29 | 0.86 |
| C | 15.00 | 45.00 | 75.00 | 3.50 | 5.25 | 3.50 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.096 | 0.904 | 0.0 | 18.0 | 169.0 | (0.0) | (11.1) | (4.7) |
| | ARM B | 0.478 | 0.000 | 0.522 | 33.0 | 0.0 | 36.0 | (9.1) | (0.0) | (0.0) |
| | ARM C | 0.929 | 0.071 | 0.000 | 260.0 | 20.0 | 0.0 | (3.1) | (10.0) | (0.0) |

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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 Scenario 3 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.87 | 11.39 | 0.076 | | 0.00 | 0.08 | 1.2 | | 0.09 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.25 | 11.16 | 0.022 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 1.03 | 11.15 | 0.093 | | 0.08 | 0.10 | 1.5 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.30 | 11.03 | 0.027 | | 0.02 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 1.27 | 10.81 | 0.117 | | 0.10 | 0.13 | 1.9 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.37 | 10.84 | 0.034 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.27 | 10.81 | 0.117 | | 0.13 | 0.13 | 2.0 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.37 | 10.84 | 0.034 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.03 | 11.15 | 0.093 | | 0.13 | 0.10 | 1.6 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.30 | 11.03 | 0.027 | | 0.03 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 0.87 | 11.39 | 0.076 | | 0.10 | 0.08 | 1.3 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.25 | 11.16 | 0.022 | | 0.03 | 0.02 | 0.4 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) |
| I | B-AC | I | 95.0 | I | 63.3 | I | 9.4 | I | 0.10 |
| I | C-A | I | 357.9 | I | 238.6 | I | I | I | I |
| I | C-B | I | 27.5 | I | 18.4 | I | 2.6 | I | 0.09 |
| I | A-B | I | 24.8 | I | 16.5 | I | I | I | I |
| I | A-C | I | 232.6 | I | 155.1 | I | I | I | I |
| I | ALL | I | 737.8 | I | 491.8 | I | 12.0 | I | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2028

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.60 | 3.90 | 2.60 |
| B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| C | 15.00 | 45.00 | 75.00 | 3.89 | 5.83 | 3.89 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|--|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | |
| 16.30 - 18.00 | ARM A | 0.000 | 0.087 | 0.913 | 0.0 | 18.0 | 190.0 | (0.0) | (11.1) | (4.7) | |
| | ARM B | 0.479 | 0.000 | 0.521 | 35.0 | 0.0 | 38.0 | (8.6) | (0.0) | (0.0) | |
| | ARM C | 0.936 | 0.064 | 0.000 | 291.0 | 20.0 | 0.0 | (3.1) | (10.0) | (0.0) | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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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 Scenario 3 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.92 | 11.29 | 0.081 | | 0.00 | 0.09 | 1.3 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.25 | 11.08 | 0.023 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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-AC | 1.09 | 11.02 | 0.099 | | 0.09 | 0.11 | 1.6 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.30 | 10.94 | 0.027 | | 0.02 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 1.34 | 10.64 | 0.126 | | 0.11 | 0.14 | 2.1 | | 0.11 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.37 | 10.73 | 0.034 | | 0.03 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.34 | 10.64 | 0.126 | | 0.14 | 0.14 | 2.1 | | 0.11 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.37 | 10.73 | 0.034 | | 0.04 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.09 | 11.02 | 0.099 | | 0.14 | 0.11 | 1.7 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.30 | 10.94 | 0.027 | | 0.04 | 0.04 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 0.92 | 11.29 | 0.081 | | 0.11 | 0.09 | 1.4 | | 0.10 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.25 | 11.08 | 0.023 | | 0.03 | 0.02 | 0.4 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | I | * INCLUSIVE QUEUEING * | I |
|---|--------|---|--------------|---------|---|--------------|-----------|------------------------|-----------|
| I | I | I | (VEH) | (VEH/H) | I | * DELAY * | I | * DELAY * | I |
| I | I | I | | | I | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| I | B-AC | I | 100.5 | 67.0 | I | 10.2 | 0.10 | 10.2 | 0.10 |
| I | C-A | I | 400.5 | 267.0 | I | | | | |
| I | C-B | I | 27.5 | 18.4 | I | 2.6 | 0.09 | 2.6 | 0.09 |
| I | A-B | I | 24.8 | 16.5 | I | | | | |
| I | A-C | I | 261.5 | 174.3 | I | | | | |
| I | ALL | I | 814.8 | 543.2 | I | 12.8 | 0.02 | 12.8 | 0.02 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2015

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.26 | 3.39 | 2.26 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.86 | 1.29 | 0.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.58 | 5.36 | 3.58 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.066 | 0.934 |
| | | 0.0 | 12.0 | 169.0 |
| | | (0.0) | (8.3) | (4.7) |
| ARM B | | 0.362 | 0.000 | 0.638 |
| | | 25.0 | 0.0 | 44.0 |
| | | (8.0) | (0.0) | (6.9) |
| ARM C | | 0.909 | 0.091 | 0.000 |
| | | 260.0 | 26.0 | 0.0 |
| | | (3.1) | (11.5) | (0.0) |

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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 Scenario 4 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.87 | 11.68 | 0.074 | | 0.00 | 0.08 | 1.2 | | 0.09 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.33 | 11.03 | 0.030 | | 0.00 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.15 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 1.03 | 11.45 | 0.090 | | 0.08 | 0.10 | 1.5 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.39 | 10.91 | 0.036 | | 0.03 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.18 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 1.27 | 11.14 | 0.114 | | 0.10 | 0.13 | 1.9 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.48 | 10.73 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.22 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.27 | 11.14 | 0.114 | | 0.13 | 0.13 | 1.9 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.48 | 10.73 | 0.044 | | 0.05 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.22 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.03 | 11.45 | 0.090 | | 0.13 | 0.10 | 1.5 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.39 | 10.91 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.10 |
| A-B | 0.18 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 0.87 | 11.68 | 0.074 | | 0.10 | 0.08 | 1.2 | | 0.09 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.33 | 11.03 | 0.030 | | 0.04 | 0.03 | 0.5 | | 0.09 |
| A-B | 0.15 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| I | STREAM | I | TOTAL DEMAND | | I | * QUEUEING * | | I | * INCLUSIVE QUEUEING * | | I | | | |
|---|--------|-------|--------------|-------|-----------|--------------|-----------|-------|------------------------|-------|-----------|---|------|---|
| I | I | I | I | I | I | * DELAY * | | I | * DELAY * | | I | | | |
| I | I | I | I | I | I | I | I | I | I | I | I | | | |
| I | I | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) | | | |
| I | B-AC | I | 95.0 | I | 63.3 | I | 9.2 | I | 0.10 | I | 9.2 | I | 0.10 | I |
| I | C-A | I | 357.9 | I | 238.6 | I | I | I | I | I | I | I | I | I |
| I | C-B | I | 35.8 | I | 23.9 | I | 3.4 | I | 0.09 | I | 3.4 | I | 0.09 | I |
| I | A-B | I | 16.5 | I | 11.0 | I | I | I | I | I | I | I | I | I |
| I | A-C | I | 232.6 | I | 155.1 | I | I | I | I | I | I | I | I | I |
| I | ALL | I | 737.8 | I | 491.8 | I | 12.6 | I | 0.02 | I | 12.6 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | I |

| 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 | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2028

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.53 | 3.79 | 2.53 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.96 | 5.94 | 3.96 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.059 | 0.941 |
| | | 0.0 | 12.0 | 190.0 |
| | | (0.0) | (8.3) | (4.7) |
| ARM B | | 0.370 | 0.000 | 0.630 |
| | | 27.0 | 0.0 | 46.0 |
| | | (7.4) | (0.0) | (6.5) |
| ARM C | | 0.918 | 0.082 | 0.000 |
| | | 291.0 | 26.0 | 0.0 |
| | | (3.1) | (11.5) | (0.0) |

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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 Scenario 4 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.92 | 11.57 | 0.079 | | 0.00 | 0.09 | 1.2 | | 0.09 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.33 | 10.96 | 0.030 | | 0.00 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.15 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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-AC | 1.09 | 11.32 | 0.097 | | 0.09 | 0.11 | 1.6 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.39 | 10.82 | 0.036 | | 0.03 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.18 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 1.34 | 10.97 | 0.122 | | 0.11 | 0.14 | 2.0 | | 0.10 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.48 | 10.62 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.22 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.34 | 10.97 | 0.122 | | 0.14 | 0.14 | 2.1 | | 0.10 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.48 | 10.62 | 0.045 | | 0.05 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.22 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.09 | 11.32 | 0.097 | | 0.14 | 0.11 | 1.6 | | 0.10 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.39 | 10.82 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.10 |
| A-B | 0.18 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 0.92 | 11.57 | 0.079 | | 0.11 | 0.09 | 1.3 | | 0.09 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.33 | 10.96 | 0.030 | | 0.04 | 0.03 | 0.5 | | 0.09 |
| A-B | 0.15 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 100.5 | 67.0 | 9.9 |
| C-A | 400.5 | 267.0 | 0.10 |
| C-B | 35.8 | 23.9 | 3.4 |
| A-B | 16.5 | 11.0 | |
| A-C | 261.5 | 174.3 | |
| ALL | 814.8 | 543.2 | 13.3 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2015

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|-------|---|--|--|------------------------------------|---------------------------------------|-----------------------------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.11 | 3.17 | 2.11 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.86 | 1.29 | 0.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.72 | 5.59 | 3.72 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.000 | 1.000 |
| | | (0.0) | (0.0) | (4.7) |
| | ARM B | 0.159 | 0.000 | 0.841 |
| | | (9.1) | (0.0) | (6.9) |
| | ARM C | 0.872 | 0.128 | 0.000 |
| | | (3.1) | (10.5) | (0.0) |

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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 Scenario 5 - 2015
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.87 | 12.20 | 0.071 | | 0.00 | 0.08 | 1.1 | | 0.09 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.48 | 11.18 | 0.043 | | 0.00 | 0.04 | 0.6 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 1.03 | 12.02 | 0.086 | | 0.08 | 0.09 | 1.4 | | 0.09 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.57 | 11.06 | 0.051 | | 0.04 | 0.05 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 1.27 | 11.77 | 0.108 | | 0.09 | 0.12 | 1.8 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.70 | 10.90 | 0.064 | | 0.05 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.27 | 11.77 | 0.108 | | 0.12 | 0.12 | 1.8 | | 0.10 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.70 | 10.90 | 0.064 | | 0.07 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 1.03 | 12.02 | 0.086 | | 0.12 | 0.09 | 1.4 | | 0.09 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.57 | 11.06 | 0.051 | | 0.07 | 0.07 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 0.87 | 12.20 | 0.071 | | 0.09 | 0.08 | 1.2 | | 0.09 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.48 | 11.18 | 0.043 | | 0.05 | 0.04 | 0.7 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 95.0 | I | 63.3 | I | 8.7 | I | 0.09 | I |
| I | C-A | I | 357.9 | I | 238.6 | I | I | I | I | I |
| I | C-B | I | 52.3 | I | 34.9 | I | 5.0 | I | 0.10 | I |
| I | A-B | I | 0.0 | I | 0.0 | I | I | I | I | I |
| I | A-C | I | 232.6 | I | 155.1 | I | I | I | I | I |
| I | ALL | I | 737.8 | I | 491.8 | I | 13.7 | I | 0.02 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2028

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.38 | 3.56 | 2.38 |
| B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| C | 15.00 | 45.00 | 75.00 | 4.11 | 6.17 | 4.11 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.000 | 1.000 | 0.0 | 0.0 | 190.0 | (0.0) | (0.0) | (4.7) |
| | ARM B | 0.178 | 0.000 | 0.822 | 13.0 | 0.0 | 60.0 | (7.7) | (0.0) | (1.5) |
| | ARM C | 0.884 | 0.116 | 0.000 | 291.0 | 38.0 | 0.0 | (3.1) | (10.5) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 5 - 2028
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.92 | 12.08 | 0.076 | | 0.00 | 0.08 | 1.2 | | 0.09 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.48 | 11.10 | 0.043 | | 0.00 | 0.04 | 0.7 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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-AC | 1.09 | 11.88 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.09 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.57 | 10.97 | 0.052 | | 0.04 | 0.05 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 1.34 | 11.59 | 0.116 | | 0.10 | 0.13 | 1.9 | | 0.10 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.70 | 10.78 | 0.065 | | 0.05 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.34 | 11.59 | 0.116 | | 0.13 | 0.13 | 2.0 | | 0.10 |
| C-A | 5.34 | | | | | | | | |
| C-B | 0.70 | 10.78 | 0.065 | | 0.07 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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-AC | 1.09 | 11.88 | 0.092 | | 0.13 | 0.10 | 1.6 | | 0.09 |
| C-A | 4.36 | | | | | | | | |
| C-B | 0.57 | 10.97 | 0.052 | | 0.07 | 0.08 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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-AC | 0.92 | 12.08 | 0.076 | | 0.10 | 0.08 | 1.3 | | 0.09 |
| C-A | 3.65 | | | | | | | | |
| C-B | 0.48 | 11.10 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN) |
| B-AC | 100.5 | 9.4 | 9.4 |
| C-A | 400.5 | | |
| C-B | 52.3 | 5.0 | 5.0 |
| A-B | 0.0 | | |
| A-C | 261.5 | | |
| ALL | 814.8 | 14.4 | 14.4 |

* 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 =====

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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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Run with file:-
"W:\Projects\6301 - Drehid MBT Facility\05-Design\01-Calculations\Traffic\Picady\PM Peak Check Scen 2.vpi"
(drive-on-the-left) at 15:10:42 on Wednesday, 30 May 2012

RUN INFORMATION

RUN TITLE: 6301-MBT-PM Turning Check Scen 2
LOCATION:
DATE: 10/07/08
CLIENT:
ENUMERATOR: Brendan Ward [DUB-35LJ52J-BW]
JOB NUMBER: 6301
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS R403 West
ARM B IS Entrance
ARM C IS R403 East

STREAM LABELLING CONVENTION

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

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 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

 .SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream C-A | Opposing Stream C-A | Slope For Stream C-B | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | | 0.50 | | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2029

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | ARM A | I | 15.00 | I | 45.00 | I | 75.00 | I | 2.81 | I | 4.22 | I | 2.81 |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 0.66 | I | 0.99 | I | 0.66 |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 3.70 | I | 5.55 | I | 3.70 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.151 | 0.849 |
| | | (0.0) | (8.8) | (4.7) |
| | ARM B | 0.679 | 0.000 | 0.321 |
| | | (11.1) | (0.0) | (5.9) |
| | ARM C | 0.990 | 0.010 | 0.000 |
| | | (3.1) | (33.3) | (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 DEMAND SET Scenario 1 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.67 | 10.62 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.04 | 9.09 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.79 | 10.34 | 0.077 | | 0.07 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.04 | 8.96 | 0.005 | | 0.00 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.97 | 9.93 | 0.098 | | 0.08 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.06 | 8.78 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.62 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.97 | 9.93 | 0.098 | | 0.11 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.06 | 8.78 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.62 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.79 | 10.34 | 0.077 | | 0.11 | 0.08 | 1.3 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.04 | 8.96 | 0.005 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.67 | 10.62 | 0.063 | | 0.08 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.04 | 9.09 | 0.004 | | 0.01 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 73.0 | 48.6 | 7.7 |
| C-A | 403.3 | 268.9 | 0.11 |
| C-B | 4.1 | 2.8 | 0.5 |
| A-B | 46.8 | 31.2 | |
| A-C | 262.9 | 175.3 | |
| ALL | 790.1 | 526.7 | 8.2 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 1 - 2035

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.92 | 4.39 | 2.92 |
| B | 15.00 | 45.00 | 75.00 | 0.68 | 1.01 | 0.68 |
| C | 15.00 | 45.00 | 75.00 | 3.88 | 5.81 | 3.88 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.145 | 0.855 | 0.0 | 34.0 | 200.0 | (0.0) | (8.8) | (4.5) |
| | ARM B | 0.667 | 0.000 | 0.333 | 36.0 | 0.0 | 18.0 | (11.1) | (0.0) | (0.0) |
| | ARM C | 0.990 | 0.010 | 0.000 | 307.0 | 3.0 | 0.0 | (2.9) | (33.3) | (0.0) |

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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 Scenario 1 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.68 | 10.60 | 0.064 | | 0.00 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.04 | 9.07 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

| 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-AC | 0.81 | 10.30 | 0.079 | | 0.07 | 0.08 | 1.2 | | 0.11 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.04 | 8.93 | 0.005 | | 0.00 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.99 | 9.88 | 0.100 | | 0.08 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.06 | 8.74 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.62 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.99 | 9.88 | 0.100 | | 0.11 | 0.11 | 1.7 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.06 | 8.74 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.62 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.81 | 10.30 | 0.079 | | 0.11 | 0.09 | 1.3 | | 0.11 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.04 | 8.93 | 0.005 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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-AC | 0.68 | 10.60 | 0.064 | | 0.09 | 0.07 | 1.1 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.04 | 9.07 | 0.004 | | 0.01 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.43 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 74.3 | 49.6 | 7.9 |
| C-A | 422.6 | 281.7 | 0.11 |
| C-B | 4.1 | 2.8 | 0.11 |
| A-B | 46.8 | 31.2 | |
| A-C | 275.3 | 183.5 | |
| ALL | 823.1 | 548.7 | 8.4 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2029

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.67 | 4.01 | 2.67 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.66 | 0.99 | 0.66 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.84 | 5.76 | 3.84 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|--------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.107 | 0.893 |
| | | 0.0 | 23.0 | 191.0 |
| | | (0.0) | (8.7) | (4.7) |
| | ARM B | 0.528 | 0.000 | 0.472 |
| | | 28.0 | 0.0 | 25.0 |
| | | (10.7) | (0.0) | (0.0) |
| ARM C | 0.954 | 0.046 | 0.000 | |
| | 293.0 | 14.0 | 0.0 | |
| | (3.1) | (14.3) | (0.0) | |

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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 Scenario 2 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.67 | 10.93 | 0.061 | | 0.00 | 0.06 | 0.9 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.18 | 10.65 | 0.017 | | 0.00 | 0.02 | 0.2 | | 0.10 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.79 | 10.66 | 0.075 | | 0.06 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.21 | 10.50 | 0.020 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.97 | 10.28 | 0.095 | | 0.08 | 0.10 | 1.5 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.26 | 10.30 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.97 | 10.28 | 0.095 | | 0.10 | 0.10 | 1.6 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.26 | 10.30 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.79 | 10.66 | 0.075 | | 0.10 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.21 | 10.50 | 0.020 | | 0.03 | 0.03 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.67 | 10.93 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.18 | 10.65 | 0.017 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 73.0 | 48.6 | 7.4 |
| C-A | 403.3 | 268.9 | 1.9 |
| C-B | 19.3 | 12.8 | 0.10 |
| A-B | 31.7 | 21.1 | |
| A-C | 262.9 | 175.3 | |
| ALL | 790.1 | 526.7 | 9.3 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2035

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.79 | 4.18 | 2.79 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.68 | 1.01 | 0.68 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.01 | 6.02 | 4.01 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|----------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.103 | 0.897 |
| | | (0.0) | (8.7) | (4.5) |
| | ARM B | 0.519 | 0.000 | 0.481 |
| | | (28.0) | (0.0) | (26.7) |
| | ARM C | 0.956 | 0.044 | 0.000 |
| | | (307.0) | (14.0) | (0.0) |
| | | (2.9) | (14.3) | (0.0) |

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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 Scenario 2 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.68 | 10.91 | 0.062 | | 0.00 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.18 | 10.62 | 0.017 | | 0.00 | 0.02 | 0.2 | | 0.10 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

| 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-AC | 0.81 | 10.63 | 0.076 | | 0.07 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.21 | 10.46 | 0.020 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.99 | 10.23 | 0.097 | | 0.08 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.26 | 10.26 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.99 | 10.23 | 0.097 | | 0.11 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.26 | 10.26 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.10 |
| A-B | 0.42 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.81 | 10.63 | 0.076 | | 0.11 | 0.08 | 1.3 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.21 | 10.46 | 0.020 | | 0.03 | 0.03 | 0.3 | | 0.10 |
| A-B | 0.34 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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-AC | 0.68 | 10.91 | 0.062 | | 0.08 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.18 | 10.62 | 0.017 | | 0.02 | 0.02 | 0.3 | | 0.10 |
| A-B | 0.29 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 74.3 | 49.6 | 7.6 |
| C-A | 422.6 | 281.7 | 1.9 |
| C-B | 19.3 | 12.8 | 0.10 |
| A-B | 31.7 | 21.1 | |
| A-C | 275.3 | 183.5 | |
| ALL | 823.1 | 548.7 | 9.5 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2029

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.61 | 3.92 | 2.61 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.66 | 0.99 | 0.66 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.90 | 5.85 | 3.90 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.086 | 0.914 |
| | | 0.0 | 18.0 | 191.0 |
| | | (0.0) | (11.1) | (4.7) |
| ARM B | | 0.472 | 0.000 | 0.528 |
| | | 25.0 | 0.0 | 28.0 |
| | | (12.0) | (0.0) | (0.0) |
| ARM C | | 0.939 | 0.061 | 0.000 |
| | | 293.0 | 19.0 | 0.0 |
| | | (3.1) | (10.5) | (0.0) |

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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 Scenario 3 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.67 | 11.04 | 0.060 | | 0.00 | 0.06 | 0.9 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.24 | 11.03 | 0.022 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.79 | 10.77 | 0.074 | | 0.06 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.28 | 10.88 | 0.026 | | 0.02 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.97 | 10.40 | 0.093 | | 0.08 | 0.10 | 1.5 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.35 | 10.68 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.97 | 10.40 | 0.093 | | 0.10 | 0.10 | 1.5 | | 0.11 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.35 | 10.68 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.79 | 10.77 | 0.074 | | 0.10 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.28 | 10.88 | 0.026 | | 0.03 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.67 | 11.04 | 0.060 | | 0.08 | 0.06 | 1.0 | | 0.10 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.24 | 11.03 | 0.022 | | 0.03 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | |
| I | I | | | I | | | I | (MIN/VEH) | |
| I | B-AC | I | 73.0 | I | 48.6 | I | 7.3 | I | 0.10 |
| I | C-A | I | 403.3 | I | 268.9 | I | | I | |
| I | C-B | I | 26.2 | I | 17.4 | I | 2.5 | I | 0.09 |
| I | A-B | I | 24.8 | I | 16.5 | I | | I | |
| I | A-C | I | 262.9 | I | 175.3 | I | | I | |
| I | ALL | I | 790.1 | I | 526.7 | I | 9.8 | I | 0.01 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream |
| I | | | | | | | | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | I |
| | | | | | | | | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2035

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.72 | 4.09 | 2.72 |
| B | 15.00 | 45.00 | 75.00 | 0.68 | 1.01 | 0.68 |
| C | 15.00 | 45.00 | 75.00 | 4.07 | 6.11 | 4.07 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.083 | 0.917 | 0.0 | 18.0 | 200.0 | (0.0) | (11.1) | (4.5) |
| | ARM B | 0.463 | 0.000 | 0.537 | 25.0 | 0.0 | 29.0 | (12.0) | (0.0) | (6.9) |
| | ARM C | 0.942 | 0.058 | 0.000 | 307.0 | 19.0 | 0.0 | (2.9) | (10.5) | (0.0) |

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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 Scenario 3 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.68 | 11.02 | 0.061 | | 0.00 | 0.07 | 0.9 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.24 | 11.00 | 0.022 | | 0.00 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

| 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-AC | 0.81 | 10.74 | 0.075 | | 0.07 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.28 | 10.84 | 0.026 | | 0.02 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.99 | 10.35 | 0.096 | | 0.08 | 0.11 | 1.5 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.35 | 10.63 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.99 | 10.35 | 0.096 | | 0.11 | 0.11 | 1.6 | | 0.11 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.35 | 10.63 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.10 |
| A-B | 0.33 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.81 | 10.74 | 0.075 | | 0.11 | 0.08 | 1.3 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.28 | 10.84 | 0.026 | | 0.03 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.27 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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-AC | 0.68 | 11.02 | 0.062 | | 0.08 | 0.07 | 1.0 | | 0.10 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.24 | 11.00 | 0.022 | | 0.03 | 0.02 | 0.3 | | 0.09 |
| A-B | 0.23 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 74.3 | I | 49.6 | I | 7.5 | I | 0.10 | I |
| I | C-A | I | 422.6 | I | 281.7 | I | I | I | I | I |
| I | C-B | I | 26.2 | I | 17.4 | I | 2.5 | I | 0.09 | I |
| I | A-B | I | 24.8 | I | 16.5 | I | I | I | I | I |
| I | A-C | I | 275.3 | I | 183.5 | I | I | I | I | I |
| I | ALL | I | 823.1 | I | 548.7 | I | 10.0 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2029

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.53 | 3.79 | 2.53 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.66 | 0.99 | 0.66 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.99 | 5.98 | 3.99 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.054 | 0.946 |
| | | 0.0 | 11.0 | 191.0 |
| | | (0.0) | (9.1) | (4.7) |
| ARM B | | 0.396 | 0.000 | 0.604 |
| | | 21.0 | 0.0 | 32.0 |
| | | (9.5) | (0.0) | (0.3) |
| ARM C | | 0.918 | 0.082 | 0.000 |
| | | 293.0 | 26.0 | 0.0 |
| | | (3.1) | (11.5) | (0.0) |

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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 Scenario 4 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.67 | 11.23 | 0.059 | | 0.00 | 0.06 | 0.9 | | 0.09 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.33 | 10.96 | 0.030 | | 0.00 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.14 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.79 | 10.98 | 0.072 | | 0.06 | 0.08 | 1.1 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.39 | 10.82 | 0.036 | | 0.03 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.16 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.97 | 10.63 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.10 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.48 | 10.62 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.20 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.97 | 10.63 | 0.092 | | 0.10 | 0.10 | 1.5 | | 0.10 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.48 | 10.62 | 0.045 | | 0.05 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.20 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.79 | 10.98 | 0.072 | | 0.10 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.39 | 10.82 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.10 |
| A-B | 0.16 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.67 | 11.23 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.09 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.33 | 10.96 | 0.030 | | 0.04 | 0.03 | 0.5 | | 0.09 |
| A-B | 0.14 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 73.0 | 48.6 | 7.2 |
| C-A | 403.3 | 268.9 | 3.4 |
| C-B | 35.8 | 23.9 | 0.10 |
| A-B | 15.1 | 10.1 | |
| A-C | 262.9 | 175.3 | |
| ALL | 790.1 | 526.7 | 10.6 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2035

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.64 | 3.96 | 2.64 |
| B | 15.00 | 45.00 | 75.00 | 0.68 | 1.01 | 0.68 |
| C | 15.00 | 45.00 | 75.00 | 4.16 | 6.24 | 4.16 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.052 | 0.948 | 0.0 | 11.0 | 200.0 | (0.0) | (9.1) | (4.5) |
| | ARM B | 0.389 | 0.000 | 0.611 | 21.0 | 0.0 | 33.0 | (9.5) | (0.0) | (0.0) |
| | ARM C | 0.922 | 0.078 | 0.000 | 307.0 | 26.0 | 0.0 | (2.9) | (11.5) | (0.0) |

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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 Scenario 4 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.68 | 11.21 | 0.060 | | 0.00 | 0.06 | 0.9 | | 0.09 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.33 | 10.93 | 0.030 | | 0.00 | 0.03 | 0.4 | | 0.09 |
| A-B | 0.14 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

| 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-AC | 0.81 | 10.95 | 0.074 | | 0.06 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.39 | 10.78 | 0.036 | | 0.03 | 0.04 | 0.5 | | 0.10 |
| A-B | 0.16 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.99 | 10.58 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.10 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.48 | 10.58 | 0.045 | | 0.04 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.20 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.99 | 10.58 | 0.094 | | 0.10 | 0.10 | 1.5 | | 0.10 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.48 | 10.58 | 0.045 | | 0.05 | 0.05 | 0.7 | | 0.10 |
| A-B | 0.20 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.81 | 10.95 | 0.074 | | 0.10 | 0.08 | 1.2 | | 0.10 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.39 | 10.78 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.10 |
| A-B | 0.16 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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-AC | 0.68 | 11.21 | 0.060 | | 0.08 | 0.06 | 1.0 | | 0.09 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.33 | 10.93 | 0.030 | | 0.04 | 0.03 | 0.5 | | 0.09 |
| A-B | 0.14 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 74.3 | 49.6 | 7.4 |
| C-A | 422.6 | 281.7 | 3.4 |
| C-B | 35.8 | 23.9 | 0.10 |
| A-B | 15.1 | 10.1 | |
| A-C | 275.3 | 183.5 | |
| ALL | 823.1 | 548.7 | 10.8 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2029

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 | | | RATE OF FLOW (VEH/MIN) | | |
|-----|-----------------------------------|------------------------|--------------------|------------------------|----------------|------------|
| | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| A | 15.00 | 45.00 | 75.00 | 2.39 | 3.58 | 2.39 |
| B | 15.00 | 45.00 | 75.00 | 0.66 | 0.99 | 0.66 |
| C | 15.00 | 45.00 | 75.00 | 4.13 | 6.19 | 4.13 |

| TIME | TURNING PROPORTIONS | | | TURNING COUNTS (VEH/HR) | | | (PERCENTAGE OF H.V.S) | | | |
|---------------|---------------------|-------|-------|-------------------------|-------|-------|-----------------------|--------|---------|---------|
| | FROM/TO | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.000 | 1.000 | 0.0 | 0.0 | 191.0 | (0.0) | (0.0) | (4.7) |
| | ARM B | 0.245 | 0.000 | 0.755 | 13.0 | 0.0 | 40.0 | (7.7) | (0.0) | (10.8) |
| | ARM C | 0.888 | 0.112 | 0.000 | 293.0 | 37.0 | 0.0 | (3.1) | (10.8) | (0.0) |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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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 Scenario 5 - 2029
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.67 | 11.63 | 0.057 | | 0.00 | 0.06 | 0.9 | | 0.09 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.46 | 11.07 | 0.042 | | 0.00 | 0.04 | 0.6 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.79 | 11.41 | 0.070 | | 0.06 | 0.07 | 1.1 | | 0.09 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.55 | 10.93 | 0.051 | | 0.04 | 0.05 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.97 | 11.10 | 0.088 | | 0.07 | 0.10 | 1.4 | | 0.10 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.68 | 10.75 | 0.063 | | 0.05 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.97 | 11.10 | 0.088 | | 0.10 | 0.10 | 1.4 | | 0.10 |
| C-A | 5.38 | | | | | | | | |
| C-B | 0.68 | 10.75 | 0.063 | | 0.07 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.50 | | | | | | | | |

| 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-AC | 0.79 | 11.41 | 0.070 | | 0.10 | 0.08 | 1.2 | | 0.09 |
| C-A | 4.39 | | | | | | | | |
| C-B | 0.55 | 10.93 | 0.051 | | 0.07 | 0.07 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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-AC | 0.67 | 11.63 | 0.057 | | 0.08 | 0.06 | 0.9 | | 0.09 |
| C-A | 3.68 | | | | | | | | |
| C-B | 0.46 | 11.07 | 0.042 | | 0.05 | 0.04 | 0.7 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.40 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 73.0 | I | 48.6 | I | 6.9 | I | 0.09 | I |
| I | C-A | I | 403.3 | I | 268.9 | I | I | I | I | I |
| I | C-B | I | 50.9 | I | 34.0 | I | 4.9 | I | 0.10 | I |
| I | A-B | I | 0.0 | I | 0.0 | I | I | I | I | I |
| I | A-C | I | 262.9 | I | 175.3 | I | I | I | I | I |
| I | ALL | I | 790.1 | I | 526.7 | I | 11.8 | 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2035

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 |
|-----|---|------------------------|--------------------|------------------------------------|----------------|------------|
| A | 15.00 | 45.00 | 75.00 | 2.50 | 3.75 | 2.50 |
| B | 15.00 | 45.00 | 75.00 | 0.68 | 1.01 | 0.68 |
| C | 15.00 | 45.00 | 75.00 | 4.30 | 6.45 | 4.30 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 200.0 |
| | | (0.0) | (0.0) | (4.5) |
| | ARM B | 0.241 | 0.000 | 0.759 |
| | | 13.0 | 0.0 | 41.0 |
| | | (7.7) | (0.0) | (0.9) |
| | ARM C | 0.892 | 0.108 | 0.000 |
| | | 307.0 | 37.0 | 0.0 |
| | | (2.9) | (10.8) | (0.0) |

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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 Scenario 5 - 2035
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 0.68 | 11.60 | 0.058 | | 0.00 | 0.06 | 0.9 | | 0.09 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.46 | 11.04 | 0.042 | | 0.00 | 0.04 | 0.6 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

| 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-AC | 0.81 | 11.38 | 0.071 | | 0.06 | 0.08 | 1.1 | | 0.09 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.55 | 10.90 | 0.051 | | 0.04 | 0.05 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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) |
|-------------|---------------------|-----------------------|------------------------------|----------------------------------|--------------------------|------------------------|-------------------------------------|---|--|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.99 | 11.05 | 0.090 | | 0.08 | 0.10 | 1.4 | | 0.10 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.68 | 10.70 | 0.063 | | 0.05 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.99 | 11.05 | 0.090 | | 0.10 | 0.10 | 1.5 | | 0.10 |
| C-A | 5.63 | | | | | | | | |
| C-B | 0.68 | 10.70 | 0.063 | | 0.07 | 0.07 | 1.0 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.67 | | | | | | | | |

| 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-AC | 0.81 | 11.38 | 0.071 | | 0.10 | 0.08 | 1.2 | | 0.09 |
| C-A | 4.60 | | | | | | | | |
| C-B | 0.55 | 10.90 | 0.051 | | 0.07 | 0.07 | 0.8 | | 0.10 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.00 | | | | | | | | |

| 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-AC | 0.68 | 11.60 | 0.058 | | 0.08 | 0.06 | 1.0 | | 0.09 |
| C-A | 3.85 | | | | | | | | |
| C-B | 0.46 | 11.04 | 0.042 | | 0.05 | 0.04 | 0.7 | | 0.09 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.1 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 74.3 | 49.6 | 7.1 |
| C-A | 422.6 | 281.7 | 0.10 |
| C-B | 50.9 | 34.0 | 4.9 |
| A-B | 0.0 | 0.0 | |
| A-C | 275.3 | 183.5 | |
| ALL | 823.1 | 548.7 | 12.0 |

* 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.
 * 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 =====

[Printed at 15:10:57 on 30/05/2012]

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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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TRL SOFTWARE BUREAU
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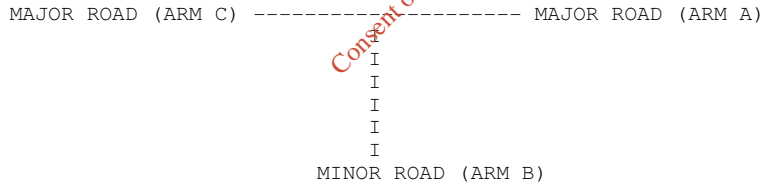
Run with file:-
"W:\Projects\6301 - Drehid MBT Facility\05-Design\01-Calculations\Traffic\Picady\PM Peak Check Const.vpi"
(drive-on-the-left) at 16:06:18 on Tuesday, 20 March 2012

RUN INFORMATION

RUN TITLE: 6301-MBT-PM Turning Check
LOCATION: Drehid
DATE: 10/07/08
CLIENT:
ENUMERATOR: Brendan Ward [DUB-35LJ52J-BW]
JOB NUMBER: 6301
STATUS:
DESCRIPTION:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS R403 West
ARM B IS Entrance
ARM C IS R403 East

STREAM LABELLING CONVENTION

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

 GEOMETRIC DATA

| I | DATA ITEM | I | MINOR ROAD B | I |
|---|------------------------------------|---|-------------------|---|
| I | TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | I | (W) 6.00 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) 250.0 M. | I |
| I | - BLOCKS TRAFFIC | I | NO | I |
| I | | I | | I |
| I | MINOR ROAD - VISIBILITY TO LEFT | I | (VB-C) 250.0 M. | I |
| I | - VISIBILITY TO RIGHT | I | (VB-A) 250.0 M. | I |
| I | - LANE 1 WIDTH | I | (WB-C) 4.00 M. | I |
| I | - LANE 2 WIDTH | I | (WB-A) 0.00 M. | I |

 .SLOPES AND INTERCEPT

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

| I | Intercept For Stream B-C | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 859.54 | 0.33 | | 0.13 | | I |

| I | Intercept For Stream B-A | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | Slope For Stream C-A | Opposing Stream C-A | Slope For Stream C-B | Opposing Stream C-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 766.80 | 0.35 | | 0.14 | | 0.22 | | 0.50 | | I |

| I | Intercept For Stream C-B | Slope For Stream A-C | Opposing Stream A-C | Slope For Stream A-B | Opposing Stream A-B | I |
|---|--------------------------|----------------------|---------------------|----------------------|---------------------|---|
| I | 781.32 | 0.30 | | 0.30 | | 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: Scenario 1 - 2013

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| I | ARM | I | 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 | I | 15.00 | I | 45.00 | I | 75.00 | I | 2.16 | I | 3.24 | I | 2.16 | I |
| I | ARM B | I | 15.00 | I | 45.00 | I | 75.00 | I | 2.56 | I | 3.84 | I | 2.56 | I |
| I | ARM C | I | 15.00 | I | 45.00 | I | 75.00 | I | 3.29 | I | 4.93 | I | 3.29 | I |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.023 | 0.977 |
| | | 0.0 | 4.0 | 169.0 |
| | | (0.0) | (100.0) | (4.7) |
| | ARM B | 0.927 | 0.000 | 0.073 |
| | | 190.0 | 0.0 | 15.0 |
| | | (2.6) | (0.0) | (6.7) |
| | ARM C | 0.989 | 0.011 | 0.000 |
| | | 260.0 | 3.0 | 0.0 |
| | | (3.1) | (33.3) | (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 DEMAND SET Scenario 1 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 2.57 | 11.04 | 0.233 | | 0.00 | 0.30 | 4.3 | | 0.12 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.04 | 9.24 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.05 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 3.07 | 10.75 | 0.286 | | 0.30 | 0.40 | 5.8 | | 0.13 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.04 | 9.14 | 0.005 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.06 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 3.76 | 10.35 | 0.363 | | 0.40 | 0.56 | 8.2 | | 0.15 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.06 | 9.00 | 0.006 | | 0.00 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.07 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.76 | 10.35 | 0.363 | | 0.56 | 0.57 | 8.5 | | 0.15 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.06 | 9.00 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.11 |
| A-B | 0.07 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.07 | 10.75 | 0.286 | | 0.57 | 0.40 | 6.3 | | 0.13 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.04 | 9.14 | 0.005 | | 0.01 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.06 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 2.57 | 11.04 | 0.233 | | 0.40 | 0.31 | 4.7 | | 0.12 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.04 | 9.24 | 0.004 | | 0.00 | 0.00 | 0.1 | | 0.11 |
| A-B | 0.05 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.3 |
| 17.00 | 0.4 |
| 17.15 | 0.6 * |
| 17.30 | 0.6 * |
| 17.45 | 0.4 |
| 18.00 | 0.3 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

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 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 282.2 | 37.7 | 0.13 |
| C-A | 357.9 | | |
| C-B | 4.1 | 0.5 | 0.11 |
| A-B | 5.5 | | |
| A-C | 232.6 | | |
| ALL | 882.3 | 38.2 | 0.04 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 2 - 2013

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|-------|---|--|--|------------------------------------|---------------------------------------|-----------------------------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.15 | 3.23 | 2.15 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.56 | 3.84 | 2.56 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.30 | 4.95 | 3.30 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.017 | 0.983 |
| | | 0.0 | 3.0 | 169.0 |
| | | (0.0) | (100.0) | (4.7) |
| | ARM B | 0.639 | 0.000 | 0.361 |
| | | 131.0 | 0.0 | 74.0 |
| | | (3.1) | (0.0) | (4.7) |
| ARM C | 0.985 | 0.015 | 0.000 | |
| | 260.0 | 4.0 | 0.0 | |
| | (3.1) | (50.0) | (0.0) | |

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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 Scenario 2 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 2.57 | 11.61 | 0.222 | | 0.00 | 0.28 | 4.1 | | 0.11 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.05 | 8.22 | 0.006 | | 0.00 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 3.07 | 11.35 | 0.271 | | 0.28 | 0.37 | 5.4 | | 0.12 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.06 | 8.13 | 0.007 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 3.76 | 11.00 | 0.342 | | 0.37 | 0.51 | 7.5 | | 0.14 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.07 | 8.00 | 0.009 | | 0.01 | 0.01 | 0.1 | | 0.13 |
| A-B | 0.06 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.76 | 11.00 | 0.342 | | 0.51 | 0.52 | 7.7 | | 0.14 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.07 | 8.00 | 0.009 | | 0.01 | 0.01 | 0.1 | | 0.13 |
| A-B | 0.06 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.07 | 11.35 | 0.271 | | 0.52 | 0.37 | 5.8 | | 0.12 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.06 | 8.13 | 0.007 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 2.57 | 11.61 | 0.222 | | 0.37 | 0.29 | 4.4 | | 0.11 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.05 | 8.22 | 0.006 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.3 |
| 17.00 | 0.4 |
| 17.15 | 0.5 * |
| 17.30 | 0.5 * |
| 17.45 | 0.4 |
| 18.00 | 0.3 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | |
| I | I | | | I | | | I | (MIN/VEH) | |
| I | B-AC | I | 282.2 | I | 188.1 | I | 34.8 | I | 0.12 |
| I | C-A | I | 357.9 | I | 238.6 | I | | I | |
| I | C-B | I | 5.5 | I | 3.7 | I | 0.7 | I | 0.12 |
| I | A-B | I | 4.1 | I | 2.8 | I | | I | |
| I | A-C | I | 232.6 | I | 155.1 | I | | I | |
| I | ALL | I | 882.3 | I | 588.2 | I | 35.5 | I | 0.04 |

* 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream |
| I | | | | | | | | C-B |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | 0.50 |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 3 - 2013

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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 |
|-----|---|------------------------|--------------------|------------------------------------|----------------|------------|
| A | 15.00 | 45.00 | 75.00 | 2.14 | 3.21 | 2.14 |
| B | 15.00 | 45.00 | 75.00 | 2.56 | 3.84 | 2.56 |
| C | 15.00 | 45.00 | 75.00 | 3.31 | 4.97 | 3.31 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|---------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.012 | 0.988 |
| | | 0.0 | 2.0 | 169.0 |
| | | (0.0) | (100.0) | (4.7) |
| | ARM B | 0.493 | 0.000 | 0.507 |
| | | 101.0 | 0.0 | 104.0 |
| | | (3.0) | (0.0) | (0.0) |
| ARM C | 0.981 | 0.019 | 0.000 | |
| | 260.0 | 5.0 | 0.0 | |
| | (3.1) | (60.0) | (0.0) | |

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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 Scenario 3 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 2.57 | 11.94 | 0.216 | | 0.00 | 0.27 | 3.9 | | 0.11 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.06 | 7.71 | 0.008 | | 0.00 | 0.01 | 0.1 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 3.07 | 11.70 | 0.263 | | 0.27 | 0.35 | 5.2 | | 0.12 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.07 | 7.63 | 0.010 | | 0.01 | 0.01 | 0.1 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 3.76 | 11.37 | 0.331 | | 0.35 | 0.49 | 7.1 | | 0.13 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.09 | 7.51 | 0.012 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.04 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.76 | 11.37 | 0.331 | | 0.49 | 0.49 | 7.4 | | 0.13 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.09 | 7.51 | 0.012 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.04 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.07 | 11.70 | 0.263 | | 0.49 | 0.36 | 5.5 | | 0.12 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.07 | 7.63 | 0.010 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 2.57 | 11.94 | 0.216 | | 0.36 | 0.28 | 4.3 | | 0.11 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.06 | 7.71 | 0.008 | | 0.01 | 0.01 | 0.1 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.3 |
| 17.00 | 0.4 |
| 17.15 | 0.5 |
| 17.30 | 0.5 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 282.2 | 33.4 | 0.12 |
| C-A | 357.9 | | |
| C-B | 6.9 | 0.9 | 0.13 |
| A-B | 2.8 | | |
| A-C | 232.6 | | |
| ALL | 882.3 | 34.3 | 0.04 |

* 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)

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 859.54 | 0.33 | 0.13 |

| 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 |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 766.80 | 0.35 | 0.14 | 0.22 | 0.50 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|--------------------------|-------------------------------|-------------------------------|
| 781.32 | 0.30 | 0.30 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 4 - 2013

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|-----|---|--|--|------------------------------------|---------------------------------------|-----------------------------------|
| A | 15.00 | 45.00 | 75.00 | 2.13 | 3.19 | 2.13 |
| B | 15.00 | 45.00 | 75.00 | 2.56 | 3.84 | 2.56 |
| C | 15.00 | 45.00 | 75.00 | 3.33 | 4.99 | 3.33 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.006 | 0.994 |
| | | 0.0 | 1.0 | 169.0 |
| | | (0.0) | (100.0) | (4.7) |
| | ARM B | 0.341 | 0.000 | 0.659 |
| | | 70.0 | 0.0 | 135.0 |
| | | (2.9) | (0.0) | (0.0) |
| | ARM C | 0.977 | 0.023 | 0.000 |
| | | 260.0 | 6.0 | 0.0 |
| | | (3.1) | (66.7) | (0.0) |
| | | | | |
| | | | | |
| | | | | |

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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 Scenario 4 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|-------------------------------|---|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 2.57 | 12.29 | 0.209 | | 0.00 | 0.26 | 3.8 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.08 | 7.40 | 0.010 | | 0.00 | 0.01 | 0.1 | | 0.14 |
| A-B | 0.01 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 3.07 | 12.08 | 0.254 | | 0.26 | 0.34 | 5.0 | | 0.11 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.09 | 7.32 | 0.012 | | 0.01 | 0.01 | 0.2 | | 0.14 |
| A-B | 0.01 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 3.76 | 11.78 | 0.319 | | 0.34 | 0.46 | 6.8 | | 0.12 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.11 | 7.22 | 0.015 | | 0.01 | 0.02 | 0.2 | | 0.14 |
| A-B | 0.02 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.76 | 11.78 | 0.319 | | 0.46 | 0.47 | 7.0 | | 0.12 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.11 | 7.22 | 0.015 | | 0.02 | 0.02 | 0.2 | | 0.14 |
| A-B | 0.02 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.07 | 12.08 | 0.254 | | 0.47 | 0.34 | 5.3 | | 0.11 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.09 | 7.32 | 0.012 | | 0.02 | 0.02 | 0.2 | | 0.14 |
| A-B | 0.01 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

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| 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-AC | 2.57 | 12.29 | 0.209 | | 0.34 | 0.27 | 4.1 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.08 | 7.40 | 0.010 | | 0.01 | 0.01 | 0.2 | | 0.14 |
| A-B | 0.01 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.3 |
| 17.00 | 0.3 |
| 17.15 | 0.5 |
| 17.30 | 0.5 |
| 17.45 | 0.3 |
| 18.00 | 0.3 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 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 | I | I | I | I | I | I | I | | |
| I | I | (VEH) | (VEH/H) | I | (MIN) | (MIN/VEH) | I | (MIN) | (MIN/VEH) | I |
| I | B-AC | I | 282.2 | I | 188.1 | I | 31.9 | I | 0.11 | I |
| I | C-A | I | 357.9 | I | 238.6 | I | I | I | I | I |
| I | C-B | I | 8.3 | I | 5.5 | I | 1.1 | I | 0.14 | I |
| I | A-B | I | 1.4 | I | 0.9 | I | I | I | I | I |
| I | A-C | I | 232.6 | I | 155.1 | I | I | I | I | I |
| I | ALL | I | 882.3 | I | 588.2 | I | 33.0 | 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 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 | 859.54 | | 0.33 | | 0.13 | 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 | Stream | C-B | I |
| I | 766.80 | | 0.35 | | 0.14 | | 0.22 | | 0.50 | I |

| I | Intercept For | Slope For | Opposing | Slope For | Opposing | I |
|---|---------------|-----------|----------|-----------|----------|---|
| I | Stream C-B | Stream | A-C | Stream | A-B | I |
| I | 781.32 | | 0.30 | | 0.30 | I |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

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

Demand set: Scenario 5 - 2013

TIME PERIOD BEGINS 16.30 AND ENDS 18.00

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|-------|---|------------------------|--------------------|------------------------------------|----------------|------------|
| ARM A | 15.00 | 45.00 | 75.00 | 2.11 | 3.17 | 2.11 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.56 | 3.84 | 2.56 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.34 | 5.01 | 3.34 |

| TIME | TURNING PROPORTIONS | | | |
|---------------|---------------------|--------|---------|--------|
| | FROM/TO | ARM A | ARM B | ARM C |
| 16.30 - 18.00 | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 169.0 |
| | | (0.0) | (0.0) | (4.7) |
| | ARM B | 0.054 | 0.000 | 0.946 |
| | | 11.0 | 0.0 | 194.0 |
| | | (9.1) | (0.0) | (5.9) |
| | ARM C | 0.974 | 0.026 | 0.000 |
| | | 260.0 | 7.0 | 0.0 |
| | | (3.1) | (71.4) | (0.0) |
| | | | | |
| | | | | |
| | | | | |

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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 Scenario 5 - 2013
 AND FOR TIME PERIOD 1

| TIME | DEMAND (VEH/MIN) | CAPACITY (VEH/MIN) | DEMAND/CAPACITY (RFC) | PEDESTRIAN FLOW (PEDS/MIN) | START QUEUE (VEHS) | END QUEUE (VEHS) | DELAY (VEH.MIN/TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/TIME SEGMENT) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|-------------|------------------|--------------------|-----------------------|----------------------------|--------------------|------------------|------------------------------|--|--|
| 16.30-16.45 | | | | | | | | | |
| B-AC | 2.57 | 13.04 | 0.197 | | 0.00 | 0.24 | 3.5 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.09 | 7.21 | 0.012 | | 0.00 | 0.01 | 0.2 | | 0.14 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

| 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-AC | 3.07 | 12.88 | 0.238 | | 0.24 | 0.31 | 4.6 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.10 | 7.13 | 0.015 | | 0.01 | 0.01 | 0.2 | | 0.14 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 3.76 | 12.67 | 0.297 | | 0.31 | 0.42 | 6.1 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.13 | 7.02 | 0.018 | | 0.01 | 0.02 | 0.3 | | 0.15 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.76 | 12.67 | 0.297 | | 0.42 | 0.42 | 6.3 | | 0.11 |
| C-A | 4.77 | | | | | | | | |
| C-B | 0.13 | 7.02 | 0.018 | | 0.02 | 0.02 | 0.3 | | 0.15 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.10 | | | | | | | | |

| 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-AC | 3.07 | 12.88 | 0.238 | | 0.42 | 0.32 | 4.8 | | 0.10 |
| C-A | 3.90 | | | | | | | | |
| C-B | 0.10 | 7.13 | 0.015 | | 0.02 | 0.02 | 0.2 | | 0.14 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.53 | | | | | | | | |

| 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-AC | 2.57 | 13.04 | 0.197 | | 0.32 | 0.25 | 3.8 | | 0.10 |
| C-A | 3.26 | | | | | | | | |
| C-B | 0.09 | 7.21 | 0.012 | | 0.02 | 0.01 | 0.2 | | 0.14 |
| A-B | 0.00 | | | | | | | | |
| A-C | 2.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.2 |
| 17.00 | 0.3 |
| 17.15 | 0.4 |
| 17.30 | 0.4 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|------------------------|--------------------------------|
| 16.45 | 0.0 |
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.0 |
| 18.00 | 0.0 |

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | * QUEUEING * * DELAY * | * INCLUSIVE QUEUEING * * DELAY * |
|--------|--------------|---------------------------|-------------------------------------|
| (VEH) | (VEH/H) | (MIN) | (MIN/VEH) |
| B-AC | 282.2 | 29.2 | 0.10 |
| C-A | 357.9 | | |
| C-B | 9.6 | 1.4 | 0.14 |
| A-B | 0.0 | | |
| A-C | 232.6 | | |
| ALL | 882.3 | 30.5 | 0.03 |

* 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

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