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## APPENDIX K

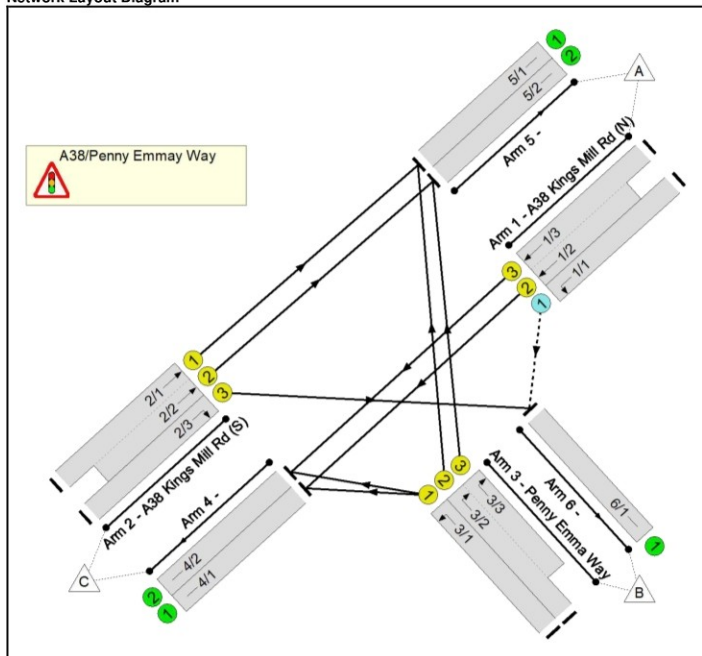
### JUNCTION 1: A38/PENNY EMMA WAY SIGNAL CONTROLLED JUNCTION

Full Input Data And Results  
Full Input Data And Results

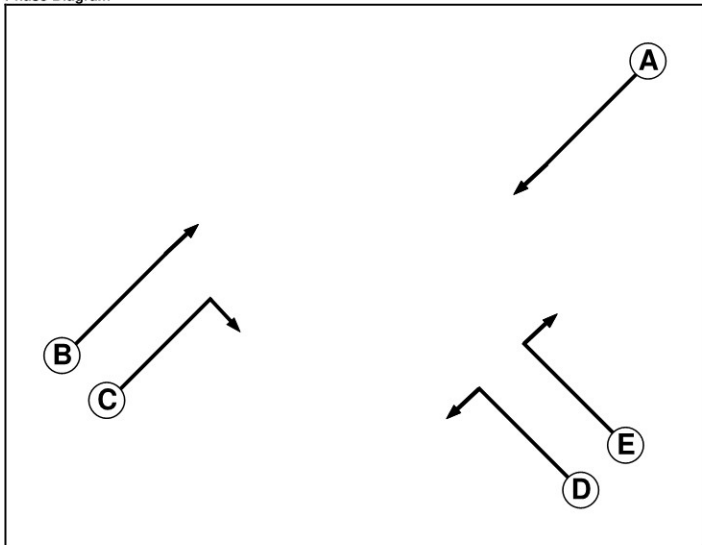
User and Project Details

|                    |                                                         |
|--------------------|---------------------------------------------------------|
| Project:           | Newark Road, Sutton in Ashfield                         |
| Title:             | A38 Kingsmill Road East/Penny Emma Way T-Junction       |
| Location:          |                                                         |
| Additional detail: |                                                         |
| File name:         | Jct 1 - A38-Penny Emmay Way Existing LinSig Model.lsg3x |
| Author:            |                                                         |
| Company:           | ADC Infrastructure Limited                              |
| Address:           | City Buildings, Carrington Street, Nottingham NG1 7FG   |

Network Layout Diagram



## Phase Diagram



## Phase Input Data

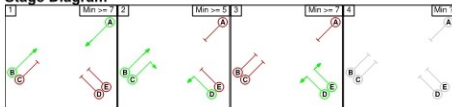
| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Traffic    |              | 7          | 7        |
| E          | Traffic    |              | 7          | 7        |

**Phase Intergreens Matrix**

| Terminating Phase | Starting Phase |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 7 | 9 | 9 |
|                   | B              | - |   | - | - | 7 |
|                   | C              | 7 | - |   | - | 7 |
|                   | D              | 6 | - | - |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

**Phases in Stage**

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | B C D           |
| 3         | D E             |
| 4         |                 |

**Stage Diagram****Phase Delays**

| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

**Prohibited Stage Change**

| From Stage | To Stage |   |   |   |
|------------|----------|---|---|---|
|            | 1        | 2 | 3 | 4 |
|            |          | 9 | 9 | X |
|            | 7        |   | 7 | X |
|            | 6        | 6 |   | X |
|            | X        | X | X |   |

## Full Input Data And Results

**Give-Way Lane Input Data**

| Junction: A38/Penny Emmay Way  |            |                                            |                                            |                  |                     |                 |                             |                                  |     |                           |                                     |
|--------------------------------|------------|--------------------------------------------|--------------------------------------------|------------------|---------------------|-----------------|-----------------------------|----------------------------------|-----|---------------------------|-------------------------------------|
| Lane                           | Movement   | Max Flow<br>when<br>Giving Way<br>(PCU/Hr) | Min Flow<br>when<br>Giving Way<br>(PCU/Hr) | Opposing<br>Lane | Opp. Lane<br>Coeff. | Opp.<br>Mvmnts. | Right Turn<br>Storage (PCU) | Non-Blocking<br>Storage<br>(PCU) | RTF | Right Turn<br>Move up (s) | Max Turns<br>in Intergreen<br>(PCU) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 6/1 (Left) | 715                                        | 0                                          | 2/3              | 0.22                | All             | -                           | -                                | -   | -                         | -                                   |

## Full Input Data And Results

## Lane Input Data

| Junction: A38/Penny Emmay Way  |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|--------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                           | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(A38 Kings Mill Rd (N)) | O         |        | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 6 Left  | 20.00              |
| 1/2<br>(A38 Kings Mill Rd (N)) | U         | A      | 2           | 3         | 13.9                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 4 Ahead | Inf                |
| 1/3<br>(A38 Kings Mill Rd (N)) | U         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 4 Ahead | Inf                |
| 2/1<br>(A38 Kings Mill Rd (S)) | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 5 Ahead | Inf                |
| 2/2<br>(A38 Kings Mill Rd (S)) | U         | B      | 2           | 3         | 13.9                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 5 Ahead | Inf                |
| 2/3<br>(A38 Kings Mill Rd (S)) | U         | C      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 6 Right | 15.00              |
| 3/1<br>(Penny Emma Way)        | U         | D      | 2           | 3         | 14.8                  | Geom          | -                                 | 3.50           | 0.00     | Y             | Arm 4 Left  | 20.00              |
| 3/2<br>(Penny Emma Way)        | U         | E      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 5 Right | 12.00              |
| 3/3<br>(Penny Emma Way)        | U         | E      | 2           | 3         | 8.7                   | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 5 Right | 12.00              |
| 4/1                            | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 4/2                            | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 5/1                            | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 5/2                            | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 6/1                            | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |

## Traffic Flow Groups

| Flow Group            | Start Time | End Time | Duration | Formula |
|-----------------------|------------|----------|----------|---------|
| 1: '2022 Observed AM' | 08:00      | 09:00    | 01:00    |         |
| 2: '2022 Observed PM' | 17:00      | 18:00    | 01:00    |         |
| 3: '2032 Bkg AM'      | 08:00      | 09:00    | 01:00    |         |
| 4: '2032 Bkg PM'      | 17:00      | 18:00    | 01:00    |         |
| 5: '2032 WD AM'       | 08:00      | 09:00    | 01:00    |         |
| 6: '2032 WD PM'       | 17:00      | 18:00    | 01:00    |         |

**Scenario 1: '2022 Observed AM'** (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 158 | 1058 | 1216 |
|        | B           | 116  | 0   | 322  | 438  |
|        | C           | 1065 | 383 | 0    | 1448 |
|        | Tot.        | 1181 | 541 | 1380 | 3102 |

**Traffic Lane Flows**

| Lane                                 | Scenario 1:<br>2022 Observed<br>AM |
|--------------------------------------|------------------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                                    |
| 1/1                                  | 158                                |
| 1/2<br>(short)                       | 529                                |
| 1/3<br>(with short)                  | 1058(In)<br>529(Out)               |
| 2/1<br>(with short)                  | 1065(In)<br>533(Out)               |
| 2/2<br>(short)                       | 532                                |
| 2/3                                  | 383                                |
| 3/1                                  | 322                                |
| 3/2<br>(with short)                  | 116(In)<br>58(Out)                 |
| 3/3<br>(short)                       | 58                                 |
| 4/1                                  | 690                                |
| 4/2                                  | 690                                |
| 5/1                                  | 591                                |
| 5/2                                  | 590                                |
| 6/1                                  | 541                                |

**Lane Saturation Flows**

| Junction: A38/Penny Emmay Way  |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 2: '2022 Observed PM'** (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 114 | 995  | 1109 |
|        | B           | 229  | 0   | 456  | 685  |
|        | C           | 1118 | 258 | 0    | 1376 |
|        | Tot.        | 1347 | 372 | 1451 | 3170 |

**Traffic Lane Flows**

| Lane                                 | Scenario 2:<br>2022 Observed<br>PM |
|--------------------------------------|------------------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                                    |
| 1/1                                  | 114                                |
| 1/2<br>(short)                       | 498                                |
| 1/3<br>(with short)                  | 995(In)<br>497(Out)                |
| 2/1<br>(with short)                  | 1118(In)<br>559(Out)               |
| 2/2<br>(short)                       | 559                                |
| 2/3                                  | 258                                |
| 3/1                                  | 456                                |
| 3/2<br>(with short)                  | 229(In)<br>114(Out)                |
| 3/3<br>(short)                       | 115                                |
| 4/1                                  | 726                                |
| 4/2                                  | 725                                |
| 5/1                                  | 673                                |
| 5/2                                  | 674                                |
| 6/1                                  | 372                                |

**Lane Saturation Flows**

| Junction: A38/Penny Emma Way   |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 3: '2032 Bkg AM'** (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 172 | 1150 | 1322 |
|        | B           | 126  | 0   | 350  | 476  |
|        | C           | 1158 | 417 | 0    | 1575 |
|        | Tot.        | 1284 | 589 | 1500 | 3373 |

**Traffic Lane Flows**

| Lane                                 | Scenario 3:<br>2032 Bkg AM |
|--------------------------------------|----------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                            |
| 1/1                                  | 172                        |
| 1/2<br>(short)                       | 575                        |
| 1/3<br>(with short)                  | 1150(In)<br>575(Out)       |
| 2/1<br>(with short)                  | 1158(In)<br>579(Out)       |
| 2/2<br>(short)                       | 579                        |
| 2/3                                  | 417                        |
| 3/1                                  | 350                        |
| 3/2<br>(with short)                  | 126(In)<br>63(Out)         |
| 3/3<br>(short)                       | 63                         |
| 4/1                                  | 750                        |
| 4/2                                  | 750                        |
| 5/1                                  | 642                        |
| 5/2                                  | 642                        |
| 6/1                                  | 589                        |

**Lane Saturation Flows**

| Junction: A38/Penny Emmay Way  |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 4: '2032 Bkg PM' (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')****Traffic Flows, Desired****Desired Flow :**

|        | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
| Origin | A           | 0    | 124 | 1081 | 1205 |
|        | B           | 249  | 0   | 495  | 744  |
|        | C           | 1215 | 280 | 0    | 1495 |
|        | Tot.        | 1464 | 404 | 1576 | 3444 |

**Traffic Lane Flows**

| Lane                                 | Scenario 4:<br>2032 Bkg PM |
|--------------------------------------|----------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                            |
| 1/1                                  | 124                        |
| 1/2<br>(short)                       | 541                        |
| 1/3<br>(with short)                  | 1081(In)<br>540(Out)       |
| 2/1<br>(with short)                  | 1215(In)<br>608(Out)       |
| 2/2<br>(short)                       | 607                        |
| 2/3                                  | 280                        |
| 3/1                                  | 495                        |
| 3/2<br>(with short)                  | 249(In)<br>124(Out)        |
| 3/3<br>(short)                       | 125                        |
| 4/1                                  | 788                        |
| 4/2                                  | 788                        |
| 5/1                                  | 732                        |
| 5/2                                  | 732                        |
| 6/1                                  | 404                        |

**Lane Saturation Flows**

| Junction: A38/Penny Emmay Way  |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 5: '2032 WD AM'** (FG5: '2032 WD AM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 173 | 1150 | 1323 |
|        | B           | 130  | 0   | 358  | 488  |
|        | C           | 1158 | 419 | 0    | 1577 |
|        | Tot.        | 1288 | 592 | 1508 | 3388 |

**Traffic Lane Flows**

| Lane                                 | Scenario 5:<br>2032 WD AM |
|--------------------------------------|---------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                           |
| 1/1                                  | 173                       |
| 1/2<br>(short)                       | 575                       |
| 1/3<br>(with short)                  | 1150(In)<br>575(Out)      |
| 2/1<br>(with short)                  | 1158(In)<br>579(Out)      |
| 2/2<br>(short)                       | 579                       |
| 2/3                                  | 419                       |
| 3/1                                  | 358                       |
| 3/2<br>(with short)                  | 130(In)<br>65(Out)        |
| 3/3<br>(short)                       | 65                        |
| 4/1                                  | 754                       |
| 4/2                                  | 754                       |
| 5/1                                  | 644                       |
| 5/2                                  | 644                       |
| 6/1                                  | 592                       |

**Lane Saturation Flows**

| Junction: A38/Penny Emma Way   |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 6: '2032 WD PM' (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')****Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 128 | 1081 | 1209 |
|        | B           | 250  | 0   | 497  | 747  |
|        | C           | 1215 | 289 | 0    | 1504 |
|        | Tot.        | 1465 | 417 | 1578 | 3460 |

**Traffic Lane Flows**

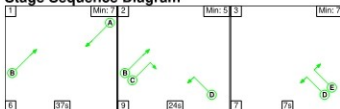
| Lane                                 | Scenario 6:<br>2032 WD PM |
|--------------------------------------|---------------------------|
| <b>Junction: A38/Penny Emmay Way</b> |                           |
| 1/1                                  | 128                       |
| 1/2<br>(short)                       | 541                       |
| 1/3<br>(with short)                  | 1081(In)<br>540(Out)      |
| 2/1<br>(with short)                  | 1215(In)<br>608(Out)      |
| 2/2<br>(short)                       | 607                       |
| 2/3                                  | 289                       |
| 3/1                                  | 497                       |
| 3/2<br>(with short)                  | 250(In)<br>125(Out)       |
| 3/3<br>(short)                       | 125                       |
| 4/1                                  | 789                       |
| 4/2                                  | 789                       |
| 5/1                                  | 733                       |
| 5/2                                  | 732                       |
| 6/1                                  | 417                       |

## Lane Saturation Flows

| Junction: A38/Penny Emma Way   |                          |          |               |               |                    |               |                   |                          |
|--------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                           | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 6 Left    | 20.00              | 100.0 %       | 1781              | 1781                     |
| 1/2<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/3<br>(A38 Kings Mill Rd (N)) | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/1<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/2<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 2/3<br>(A38 Kings Mill Rd (S)) | 3.00                     | 0.00     | Y             | Arm 6 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/1<br>(Penny Emma Way)        | 3.50                     | 0.00     | Y             | Arm 4 Left    | 20.00              | 100.0 %       | 1828              | 1828                     |
| 3/2<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 3/3<br>(Penny Emma Way)        | 3.00                     | 0.00     | Y             | Arm 5 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 4/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/2                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                            | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

## Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

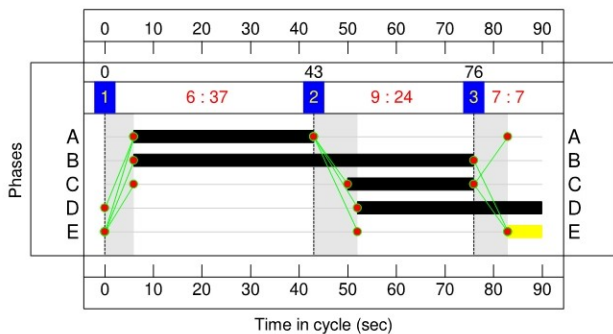
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 37 | 24 | 7  |
| Change Point | 0  | 43 | 76 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 76.1%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 76.1%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 158               | 1781              | 631            | 25.1%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 37              | -               | 1058              | 1915:1915         | 695+695        | 76.1 : 76.1% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 70              | -               | 1065              | 1915:1915         | 958+957        | 55.6 : 55.6% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 26              | -               | 383               | 1741              | 522            | 73.3%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 38              | -               | 322               | 1828              | 792            | 40.6%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 7               | -               | 116               | 1702:1702         | 151+151        | 38.3 : 38.3% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 690               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 690               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 591               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 590               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 541               | Inf               | Inf            | 0.0%         |

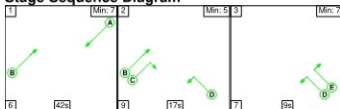
### Full Input Data And Results

| Item                                                              | Arriving (pcu) | Leaving (pcu)                                          | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------------------------------------------------|----------------|--------------------------------------------------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -              | -                                                      | 47                    | 111                          | 0                           | 12.7                                                                           | 4.4                          | 0.0                                | 17.1                | -                         | -                                | -                          | -                    |
| <b>A38/Penny Emma Way</b>                                         | -              | -                                                      | 47                    | 111                          | 0                           | 12.7                                                                           | 4.4                          | 0.0                                | 17.1                | -                         | -                                | -                          | -                    |
| 1/1                                                               | 158            | 158                                                    | 47                    | 111                          | 0                           | 0.0                                                                            | 0.2                          | -                                  | 0.2                 | 3.8                       | 0.0                              | 0.2                        | 0.2                  |
| 1/3+1/2                                                           | 1058           | 1058                                                   | -                     | -                            | -                           | 6.1                                                                            | 1.6                          | -                                  | 7.7                 | 26.1                      | 10.4                             | 1.6                        | 12.0                 |
| 2/1+2/2                                                           | 1065           | 1065                                                   | -                     | -                            | -                           | 0.8                                                                            | 0.6                          | -                                  | 1.4                 | 4.9                       | 3.8                              | 0.6                        | 4.5                  |
| 2/3                                                               | 383            | 383                                                    | -                     | -                            | -                           | 3.0                                                                            | 1.3                          | -                                  | 4.4                 | 40.9                      | 8.5                              | 1.3                        | 9.9                  |
| 3/1                                                               | 322            | 322                                                    | -                     | -                            | -                           | 1.6                                                                            | 0.3                          | -                                  | 1.9                 | 21.4                      | 5.5                              | 0.3                        | 5.8                  |
| 3/2+3/3                                                           | 116            | 116                                                    | -                     | -                            | -                           | 1.2                                                                            | 0.3                          | -                                  | 1.6                 | 48.3                      | 1.4                              | 0.3                        | 1.7                  |
| 4/1                                                               | 690            | 690                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                               | 690            | 690                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                               | 591            | 591                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                               | 590            | 590                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                               | 541            | 541                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                                |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%) |                       |                              | 18.3<br>18.3                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr) |                              | 16.95<br>17.11                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

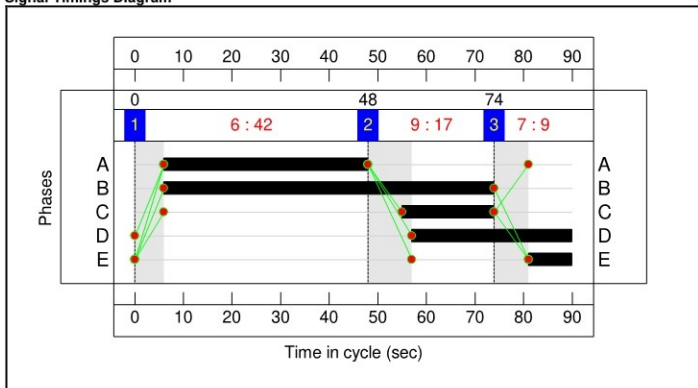
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 42 | 17 | 9  |
| Change Point | 0  | 48 | 74 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 66.7%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 66.7%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 114               | 1781              | 658            | 17.3%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 42              | -               | 995               | 1915:1915         | 748+749        | 66.5 : 66.5% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 68              | -               | 1118              | 1915:1915         | 957+957        | 58.4 : 58.4% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 19              | -               | 258               | 1741              | 387            | 66.7%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 33              | -               | 456               | 1828              | 691            | 66.0%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 9               | -               | 229               | 1702:1702         | 189+189        | 60.3 : 60.8% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 726               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 725               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 673               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 674               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 372               | Inf               | Inf            | 0.0%         |

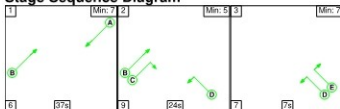
### Full Input Data And Results

| Item                                                       | Arriving (pcu) | Leaving (pcu)                                          | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|------------------------------------------------------------|----------------|--------------------------------------------------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: A38 Kingsmill Road East/Penny Emma Way T-Junction | -              | -                                                      | 25                    | 89                           | 0                           | 13.3                                                                           | 4.5                          | 0.0                                | 17.8                | -                         | -                                | -                          | -                    |
| A38/Penny Emmay Way                                        | -              | -                                                      | 25                    | 89                           | 0                           | 13.3                                                                           | 4.5                          | 0.0                                | 17.8                | -                         | -                                | -                          | -                    |
| 1/1                                                        | 114            | 114                                                    | 25                    | 89                           | 0                           | 0.0                                                                            | 0.1                          | -                                  | 0.1                 | 3.3                       | 0.0                              | 0.1                        | 0.1                  |
| 1/3+1/2                                                    | 995            | 995                                                    | -                     | -                            | -                           | 4.6                                                                            | 1.0                          | -                                  | 5.6                 | 20.2                      | 8.7                              | 1.0                        | 9.7                  |
| 2/1+2/2                                                    | 1118           | 1118                                                   | -                     | -                            | -                           | 1.1                                                                            | 0.7                          | -                                  | 1.8                 | 5.7                       | 4.5                              | 0.7                        | 5.2                  |
| 2/3                                                        | 258            | 258                                                    | -                     | -                            | -                           | 2.3                                                                            | 1.0                          | -                                  | 3.3                 | 45.7                      | 5.9                              | 1.0                        | 6.9                  |
| 3/1                                                        | 456            | 456                                                    | -                     | -                            | -                           | 2.9                                                                            | 1.0                          | -                                  | 3.9                 | 30.8                      | 9.4                              | 1.0                        | 10.3                 |
| 3/2+3/3                                                    | 229            | 229                                                    | -                     | -                            | -                           | 2.4                                                                            | 0.8                          | -                                  | 3.2                 | 50.1                      | 2.7                              | 0.8                        | 3.5                  |
| 4/1                                                        | 726            | 726                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                        | 725            | 725                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                        | 673            | 673                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                        | 674            | 674                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                        | 372            | 372                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                         |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%) |                       |                              | 35.0<br>35.0                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr) |                              | 17.71<br>17.82                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

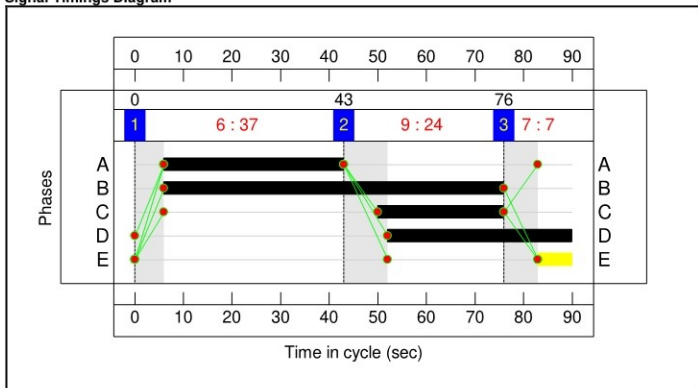
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 37 | 24 | 7  |
| Change Point | 0  | 43 | 76 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 82.7%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 82.7%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 172               | 1781              | 623            | 27.6%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 37              | -               | 1150              | 1915:1915         | 695+695        | 82.7 : 82.7% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 70              | -               | 1158              | 1915:1915         | 957+957        | 60.5 : 60.5% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 26              | -               | 417               | 1741              | 522            | 79.8%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 38              | -               | 350               | 1828              | 792            | 44.2%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 7               | -               | 126               | 1702:1702         | 151+151        | 41.6 : 41.6% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 750               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 750               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 642               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 642               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 589               | Inf               | Inf            | 0.0%         |

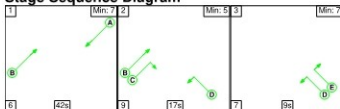
### Full Input Data And Results

| Item                                                              | Arriving (pcu) | Leaving (pcu)                                          | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------------------------------------------------|----------------|--------------------------------------------------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -              | -                                                      | 52                    | 120                          | 0                           | 14.2                                                                           | 6.0                          | 0.0                                | 20.2                | -                         | -                                | -                          | -                    |
| <b>A38/Penny Emma Way</b>                                         | -              | -                                                      | 52                    | 120                          | 0                           | 14.2                                                                           | 6.0                          | 0.0                                | 20.2                | -                         | -                                | -                          | -                    |
| 1/1                                                               | 172            | 172                                                    | 52                    | 120                          | 0                           | 0.0                                                                            | 0.2                          | -                                  | 0.2                 | 4.0                       | 0.0                              | 0.2                        | 0.2                  |
| 1/3+1/2                                                           | 1150           | 1150                                                   | -                     | -                            | -                           | 6.9                                                                            | 2.3                          | -                                  | 9.2                 | 28.8                      | 11.8                             | 2.3                        | 14.2                 |
| 2/1+2/2                                                           | 1158           | 1158                                                   | -                     | -                            | -                           | 0.9                                                                            | 0.8                          | -                                  | 1.7                 | 5.3                       | 4.3                              | 0.8                        | 5.1                  |
| 2/3                                                               | 417            | 417                                                    | -                     | -                            | -                           | 3.4                                                                            | 1.9                          | -                                  | 5.3                 | 45.5                      | 9.5                              | 1.9                        | 11.4                 |
| 3/1                                                               | 350            | 350                                                    | -                     | -                            | -                           | 1.7                                                                            | 0.4                          | -                                  | 2.1                 | 21.9                      | 6.1                              | 0.4                        | 6.5                  |
| 3/2+3/3                                                           | 126            | 126                                                    | -                     | -                            | -                           | 1.4                                                                            | 0.4                          | -                                  | 1.7                 | 49.0                      | 1.5                              | 0.4                        | 1.8                  |
| 4/1                                                               | 750            | 750                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                               | 750            | 750                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                               | 642            | 642                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                               | 642            | 642                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                               | 589            | 589                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                                |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%) |                       |                              | 8.8<br>8.8                  | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr) |                              | 20.01<br>20.20                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 4: '2032 Bkg PM' (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')

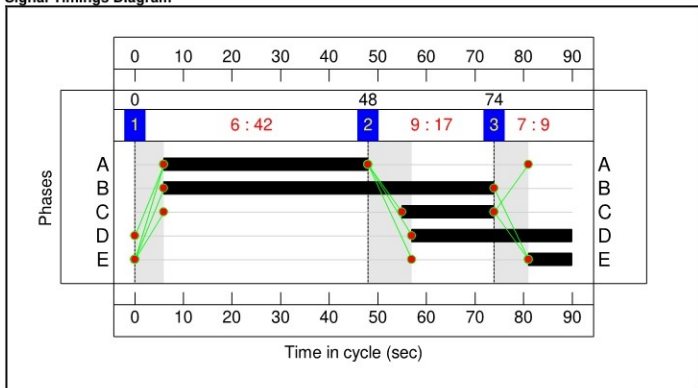
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 42 | 17 | 9  |
| Change Point | 0  | 48 | 74 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 72.4%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 72.4%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 124               | 1781              | 653            | 19.0%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 42              | -               | 1081              | 1915:1915         | 748+749        | 72.2 : 72.2% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 68              | -               | 1215              | 1915:1915         | 958+957        | 63.4 : 63.4% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 19              | -               | 280               | 1741              | 387            | 72.4%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 33              | -               | 495               | 1828              | 691            | 71.7%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 9               | -               | 249               | 1702:1702         | 189+189        | 65.6 : 66.1% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 788               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 788               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 732               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 732               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 404               | Inf               | Inf            | 0.0%         |

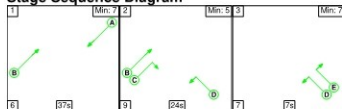
### Full Input Data And Results

| Item                                                       | Arriving (pcu) | Leaving (pcu)                                          | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|------------------------------------------------------------|----------------|--------------------------------------------------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: A38 Kingsmill Road East/Penny Emma Way T-Junction | -              | -                                                      | 28                    | 96                           | 0                           | 14.8                                                                           | 5.8                          | 0.0                                | 20.6                | -                         | -                                | -                          | -                    |
| A38/Penny Emma Way                                         | -              | -                                                      | 28                    | 96                           | 0                           | 14.8                                                                           | 5.8                          | 0.0                                | 20.6                | -                         | -                                | -                          | -                    |
| 1/1                                                        | 124            | 124                                                    | 28                    | 96                           | 0                           | 0.0                                                                            | 0.1                          | -                                  | 0.1                 | 3.4                       | 0.0                              | 0.1                        | 0.1                  |
| 1/3+1/2                                                    | 1081           | 1081                                                   | -                     | -                            | -                           | 5.1                                                                            | 1.3                          | -                                  | 6.4                 | 21.4                      | 9.8                              | 1.3                        | 11.1                 |
| 2/1+2/2                                                    | 1215           | 1215                                                   | -                     | -                            | -                           | 1.2                                                                            | 0.9                          | -                                  | 2.1                 | 6.2                       | 5.1                              | 0.9                        | 5.9                  |
| 2/3                                                        | 280            | 280                                                    | -                     | -                            | -                           | 2.5                                                                            | 1.3                          | -                                  | 3.8                 | 48.9                      | 6.5                              | 1.3                        | 7.7                  |
| 3/1                                                        | 495            | 495                                                    | -                     | -                            | -                           | 3.3                                                                            | 1.2                          | -                                  | 4.5                 | 33.0                      | 10.4                             | 1.2                        | 11.7                 |
| 3/2+3/3                                                    | 249            | 249                                                    | -                     | -                            | -                           | 2.7                                                                            | 0.9                          | -                                  | 3.6                 | 52.1                      | 3.0                              | 0.9                        | 3.9                  |
| 4/1                                                        | 788            | 788                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                        | 788            | 788                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                        | 732            | 732                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                        | 732            | 732                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                        | 404            | 404                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                         |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%) |                       |                              | 24.4<br>24.4                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr) |                              | 20.45<br>20.56                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 5: '2032 WD AM' (FG5: '2032 WD AM', Plan 1: 'Network Control Plan 1')

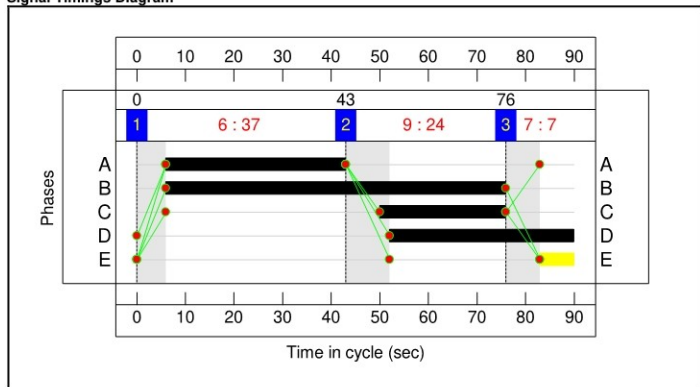
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 37 | 24 | 7  |
| Change Point | 0  | 43 | 76 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 82.7%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 82.7%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 173               | 1781              | 623            | 27.8%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 37              | -               | 1150              | 1915:1915         | 695+695        | 82.7 : 82.7% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 70              | -               | 1158              | 1915:1915         | 957+957        | 60.5 : 60.5% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 26              | -               | 419               | 1741              | 522            | 80.2%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 38              | -               | 358               | 1828              | 792            | 45.2%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 7               | -               | 130               | 1702:1702         | 151+151        | 43.0 : 43.0% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 754               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 754               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 644               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 644               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 592               | Inf               | Inf            | 0.0%         |

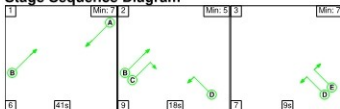
### Full Input Data And Results

| Item                                                       | Arriving (pcu) | Leaving (pcu)                                           | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                           | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|------------------------------------------------------------|----------------|---------------------------------------------------------|-----------------------|------------------------------|-----------------------------|---------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: A38 Kingsmill Road East/Penny Emma Way T-Junction | -              | -                                                       | 52                    | 121                          | 0                           | 14.4                                                                            | 6.0                          | 0.0                                | 20.4                | -                         | -                                | -                          | -                    |
| A38/Penny Emma Way                                         | -              | -                                                       | 52                    | 121                          | 0                           | 14.4                                                                            | 6.0                          | 0.0                                | 20.4                | -                         | -                                | -                          | -                    |
| 1/1                                                        | 173            | 173                                                     | 52                    | 121                          | 0                           | 0.0                                                                             | 0.2                          | -                                  | 0.2                 | 4.0                       | 0.0                              | 0.2                        | 0.2                  |
| 1/3+1/2                                                    | 1150           | 1150                                                    | -                     | -                            | -                           | 6.9                                                                             | 2.3                          | -                                  | 9.2                 | 28.8                      | 11.8                             | 2.3                        | 14.2                 |
| 2/1+2/2                                                    | 1158           | 1158                                                    | -                     | -                            | -                           | 0.9                                                                             | 0.8                          | -                                  | 1.7                 | 5.3                       | 4.3                              | 0.8                        | 5.1                  |
| 2/3                                                        | 419            | 419                                                     | -                     | -                            | -                           | 3.4                                                                             | 2.0                          | -                                  | 5.3                 | 45.8                      | 9.5                              | 2.0                        | 11.5                 |
| 3/1                                                        | 358            | 358                                                     | -                     | -                            | -                           | 1.8                                                                             | 0.4                          | -                                  | 2.2                 | 22.1                      | 6.3                              | 0.4                        | 6.7                  |
| 3/2+3/3                                                    | 130            | 130                                                     | -                     | -                            | -                           | 1.4                                                                             | 0.4                          | -                                  | 1.8                 | 49.3                      | 1.5                              | 0.4                        | 1.9                  |
| 4/1                                                        | 754            | 754                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                        | 754            | 754                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                        | 644            | 644                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                        | 644            | 644                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                        | 592            | 592                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                         |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%): |                       |                              | 8.8<br>8.8                  | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr): |                              | 20.20<br>20.39                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 6: '2032 WD PM' (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')

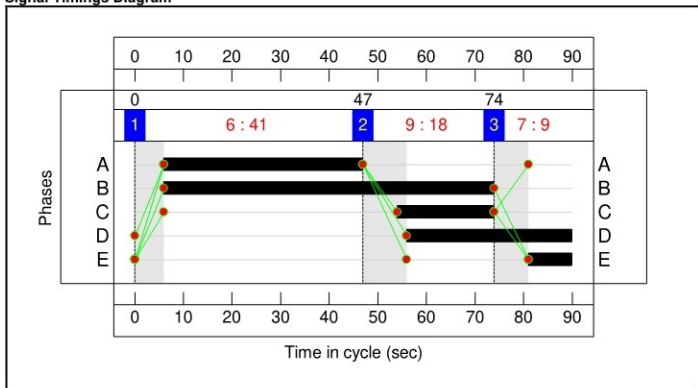
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 41 | 18 | 9  |
| Change Point | 0  | 47 | 74 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                              | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|-------------------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: A38 Kingsmill Road East/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 73.3%        |
| <b>A38/Penny Emma Way</b>                                         | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 73.3%        |
| 1/1                                                               | A38 Kings Mill Rd (N) Left  | O         | N/A               | N/A                        | -          |             | -          | -               | -               | 128               | 1781              | 651            | 19.6%        |
| 1/3+1/2                                                           | A38 Kings Mill Rd (N) Ahead | U         | N/A               | N/A                        | A          |             | 1          | 41              | -               | 1081              | 1915:1915         | 737+738        | 73.3 : 73.3% |
| 2/1+2/2                                                           | A38 Kings Mill Rd (S) Ahead | U         | N/A               | N/A                        | B          |             | 1          | 68              | -               | 1215              | 1915:1915         | 958+957        | 63.4 : 63.4% |
| 2/3                                                               | A38 Kings Mill Rd (S) Right | U         | N/A               | N/A                        | C          |             | 1          | 20              | -               | 289               | 1741              | 406            | 71.1%        |
| 3/1                                                               | Penny Emma Way Left         | U         | N/A               | N/A                        | D          |             | 1          | 34              | -               | 497               | 1828              | 711            | 69.9%        |
| 3/2+3/3                                                           | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 9               | -               | 250               | 1702:1702         | 189+189        | 66.1 : 66.1% |
| 4/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 789               | Inf               | Inf            | 0.0%         |
| 4/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 789               | Inf               | Inf            | 0.0%         |
| 5/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 733               | Inf               | Inf            | 0.0%         |
| 5/2                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 732               | Inf               | Inf            | 0.0%         |
| 6/1                                                               |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 417               | Inf               | Inf            | 0.0%         |

### Full Input Data And Results

| Item                                                       | Arriving (pcu) | Leaving (pcu)                                          | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|------------------------------------------------------------|----------------|--------------------------------------------------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: A38 Kingsmill Road East/Penny Emma Way T-Junction | -              | -                                                      | 30                    | 98                           | 0                           | 15.0                                                                           | 5.7                          | 0.0                                | 20.6                | -                         | -                                | -                          | -                    |
| A38/Penny Emmay Way                                        | -              | -                                                      | 30                    | 98                           | 0                           | 15.0                                                                           | 5.7                          | 0.0                                | 20.6                | -                         | -                                | -                          | -                    |
| 1/1                                                        | 128            | 128                                                    | 30                    | 98                           | 0                           | 0.0                                                                            | 0.1                          | -                                  | 0.1                 | 3.4                       | 0.0                              | 0.1                        | 0.1                  |
| 1/3+1/2                                                    | 1081           | 1081                                                   | -                     | -                            | -                           | 5.4                                                                            | 1.4                          | -                                  | 6.7                 | 22.4                      | 9.9                              | 1.4                        | 11.3                 |
| 2/1+2/2                                                    | 1215           | 1215                                                   | -                     | -                            | -                           | 1.2                                                                            | 0.9                          | -                                  | 2.1                 | 6.2                       | 5.1                              | 0.9                        | 5.9                  |
| 2/3                                                        | 289            | 289                                                    | -                     | -                            | -                           | 2.5                                                                            | 1.2                          | -                                  | 3.8                 | 46.8                      | 6.6                              | 1.2                        | 7.8                  |
| 3/1                                                        | 497            | 497                                                    | -                     | -                            | -                           | 3.2                                                                            | 1.1                          | -                                  | 4.3                 | 31.4                      | 10.4                             | 1.1                        | 11.5                 |
| 3/2+3/3                                                    | 250            | 250                                                    | -                     | -                            | -                           | 2.7                                                                            | 1.0                          | -                                  | 3.6                 | 52.2                      | 3.0                              | 1.0                        | 3.9                  |
| 4/1                                                        | 789            | 789                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                                        | 789            | 789                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                                        | 733            | 733                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/2                                                        | 732            | 732                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                                        | 417            | 417                                                    | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                                         |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%) |                       |                              | 22.8<br>22.8                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr) |                              | 20.51<br>20.63                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

## APPENDIX L

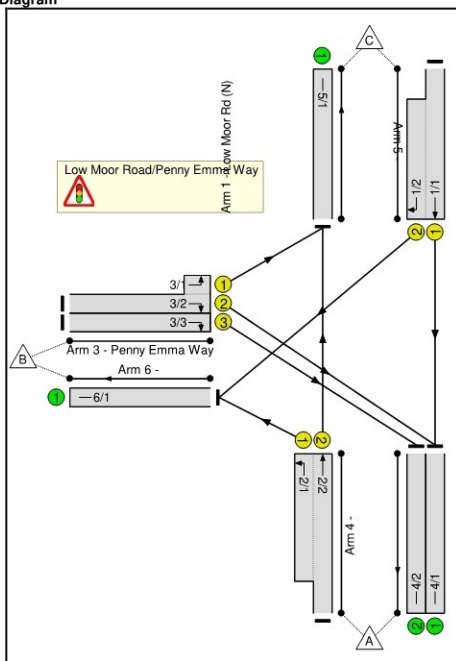
### JUNCTION 2: B6021 LOWMOOR ROAD/PENNY EMMA WAY/KIRKBY FOLLY ROAD SIGNAL CONTROLLED JUNCTION

Full Input Data And Results  
Full Input Data And Results

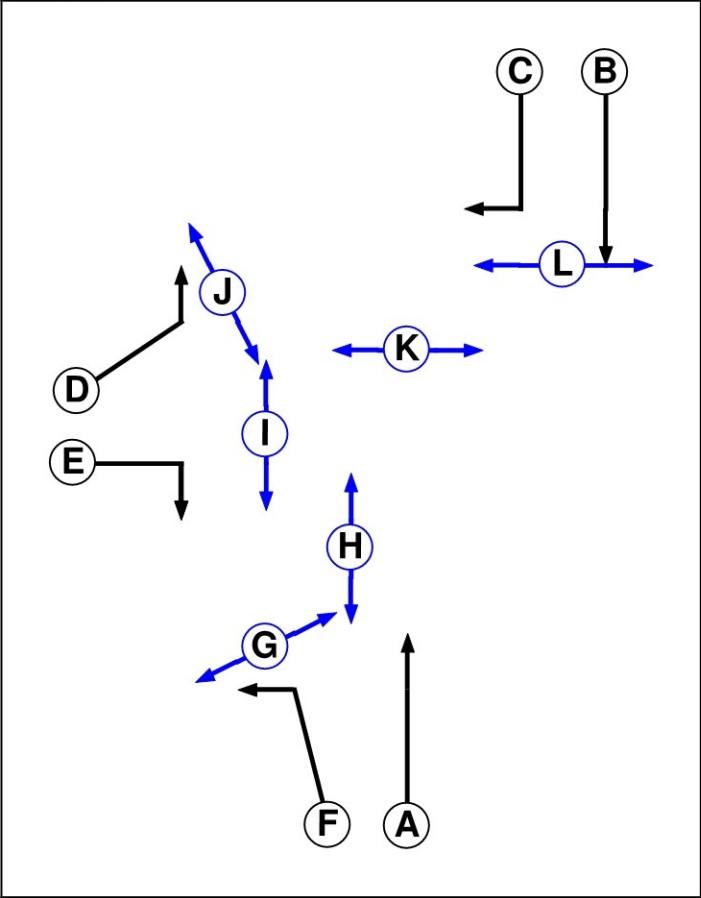
User and Project Details

|                    |                                                                  |
|--------------------|------------------------------------------------------------------|
| Project:           | Newark Road, Sutton in Ashfield                                  |
| Title:             | Low Moor Road/Penny Emma Way T-Junction                          |
| Location:          |                                                                  |
| Additional detail: |                                                                  |
| File name:         | Jct 2 - Low Moor Road-Penny Emma Way Existing LinSig Model.lsg3x |
| Author:            |                                                                  |
| Company:           | ADC Infrastructure Limited                                       |
| Address:           |                                                                  |

Network Layout Diagram



Phase Diagram



**Phase Input Data**

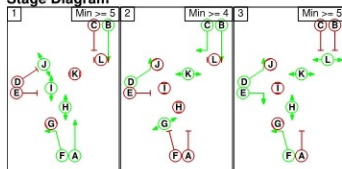
| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Traffic    |              | 7          | 7        |
| E          | Traffic    |              | 7          | 7        |
| F          | Traffic    |              | 7          | 7        |
| G          | Pedestrian |              | 5          | 4        |
| H          | Pedestrian |              | 6          | 6        |
| I          | Pedestrian |              | 6          | 6        |
| J          | Pedestrian |              | 6          | 6        |
| K          | Pedestrian |              | 5          | 4        |
| L          | Pedestrian |              | 6          | 6        |

**Phase Intergreens Matrix**

|                   |   | Starting Phase |   |   |   |   |   |   |    |   |   |   |   |
|-------------------|---|----------------|---|---|---|---|---|---|----|---|---|---|---|
| Terminating Phase |   | A              | B | C | D | E | F | G | H  | I | J | K | L |
|                   | A | -              | - | 6 | 8 | 8 | - | - | -  | - | - | 9 | 6 |
|                   | B | -              | - | - | - | 8 | - | - | -  | - | - | - | 6 |
|                   | C | 8              | - | - | - | 8 | 8 | - | 10 | - | - | - | 6 |
|                   | D | 6              | - | - | - | - | - | - | -  | 6 | 6 | - | - |
|                   | E | 6              | 6 | 6 | - | - | - | - | -  | 6 | - | - | - |
|                   | F | -              | - | 6 | - | - | - | 6 | -  | - | - | - | - |
|                   | G | -              | - | - | - | - | 7 | - | -  | - | - | - | - |
|                   | H | -              | - | 6 | - | - | - | - | -  | - | - | - | - |
|                   | I | -              | - | - | 7 | 7 | - | - | -  | - | - | - | - |
|                   | J | -              | - | - | 7 | - | - | - | -  | - | - | - | - |
|                   | K | 5              | - | - | - | - | - | - | -  | - | - | - | - |
|                   | L | 7              | 7 | 7 | - | - | - | - | -  | - | - | - | - |

**Phases in Stage**

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B F H I J     |
| 2         | B C D G K       |
| 3         | D E F H K L     |

**Stage Diagram****Phase Delays**

| Term. Stage | Start Stage | Phase | Type   | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 2           | 1           | G     | Losing | 1     | 1          |
| 2           | 1           | K     | Losing | 1     | 1          |
| 2           | 3           | G     | Losing | 1     | 1          |
| 3           | 1           | K     | Losing | 1     | 1          |

**Prohibited Stage Change**

|            |   | To Stage |   |    |
|------------|---|----------|---|----|
| From Stage |   | 1        | 2 | 3  |
|            | 1 |          | 9 | 9  |
|            | 2 | 10       |   | 10 |
|            | 3 | 7        | 7 |    |

Full Input Data And Results

### **Give-Way Lane Input Data**

**Junction: Low Moor Road/Penny Emma Way**

There are no Opposed Lanes in this Junction

**Lane Input Data**

| Junction: Low Moor Road/Penny Emma Way |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|----------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                                   | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(Low Moor Rd (N))               | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 4 Ahead | Inf                |
| 1/2<br>(Low Moor Rd (N))               | U         | C      | 2           | 3         | 11.7                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 6 Right | 12.00              |
| 2/1<br>(Low Moor Rd (S))               | U         | F      | 2           | 3         | 12.2                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 6 Left  | 15.00              |
| 2/2<br>(Low Moor Rd (S))               | U         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | N             | Arm 5 Ahead | Inf                |
| 3/1<br>(Penny Emma Way)                | U         | D      | 2           | 3         | 2.1                   | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 5 Left  | 15.00              |
| 3/2<br>(Penny Emma Way)                | U         | E      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | N             | Arm 4 Right | 15.00              |
| 3/3<br>(Penny Emma Way)                | U         | E      | 2           | 3         | 7.0                   | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 4 Right | 15.00              |
| 4/1                                    | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 4/2                                    | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 5/1                                    | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 6/1                                    | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |

**Traffic Flow Groups**

| Flow Group            | Start Time | End Time | Duration | Formula |
|-----------------------|------------|----------|----------|---------|
| 1: '2022 Observed AM' | 08:00      | 09:00    | 01:00    |         |
| 2: '2022 Observed PM' | 17:00      | 18:00    | 01:00    |         |
| 3: '2032 Bkg AM'      | 08:00      | 09:00    | 01:00    |         |
| 4: '2032 Bkg PM'      | 17:00      | 18:00    | 01:00    |         |
| 5: '2032 WD AM'       | 08:00      | 09:00    | 01:00    |         |
| 6: '2032 WD PM'       | 17:00      | 18:00    | 01:00    |         |

**Scenario 1: '2022 Observed AM'** (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 319 | 487 | 806  |
|        | B           | 276 | 0   | 154 | 430  |
|        | C           | 580 | 308 | 0   | 888  |
|        | Tot.        | 856 | 627 | 641 | 2124 |

**Traffic Lane Flows**

| Lane                                          | Scenario 1:<br>2022 Observed AM |
|-----------------------------------------------|---------------------------------|
| <b>Junction: Low Moor Road/Penny Emma Way</b> |                                 |
| 1/1<br>(with short)                           | 888(In)<br>580(Out)             |
| 1/2<br>(short)                                | 308                             |
| 2/1<br>(short)                                | 319                             |
| 2/2<br>(with short)                           | 806(In)<br>487(Out)             |
| 3/1<br>(short)                                | 154                             |
| 3/2<br>(with short)                           | 270(In)<br>116(Out)             |
| 3/3                                           | 160                             |
| 4/1                                           | 696                             |
| 4/2                                           | 160                             |
| 5/1                                           | 641                             |
| 6/1                                           | 627                             |

**Lane Saturation Flows**

| Junction: Low Moor Road/Penny Emma Way |                          |          |               |               |                    |               |                   |                          |
|----------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/2<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 6 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 2/1<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | Y             | Arm 6 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 2/2<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | N             | Arm 5 Ahead   | Inf                | 100.0 %       | 2055              | 2055                     |
| 3/1<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 5 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/2<br>(Penny Emma Way)                | 3.00                     | 0.00     | N             | Arm 4 Right   | 15.00              | 100.0 %       | 1868              | 1868                     |
| 3/3<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 4 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 4/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 2: '2022 Observed PM'** (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 374 | 553 | 927  |
|        | B           | 286 | 0   | 337 | 623  |
|        | C           | 631 | 187 | 0   | 818  |
|        | Tot.        | 917 | 561 | 890 | 2368 |



## Full Input Data And Results

**Scenario 3: '2032 Bkg AM'** (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 347 | 529 | 876  |
|        | B           | 300 | 0   | 167 | 467  |
|        | C           | 630 | 335 | 0   | 965  |
|        | Tot.        | 930 | 682 | 696 | 2308 |

### Traffic Lane Flows

| Lane                                          | Scenario 3:<br>2032 Bkg AM |
|-----------------------------------------------|----------------------------|
| <b>Junction: Low Moor Road/Penny Emma Way</b> |                            |
| 1/1<br>(with short)                           | 965(In)<br>630(Out)        |
| 1/2<br>(short)                                | 335                        |
| 2/1<br>(short)                                | 347                        |
| 2/2<br>(with short)                           | 876(In)<br>529(Out)        |
| 3/1<br>(short)                                | 167                        |
| 3/2<br>(with short)                           | 307(In)<br>140(Out)        |
| 3/3                                           | 160                        |
| 4/1                                           | 770                        |
| 4/2                                           | 160                        |
| 5/1                                           | 696                        |
| 6/1                                           | 682                        |

**Lane Saturation Flows**

| Junction: Low Moor Road/Penny Emma Way |                          |          |               |               |                    |               |                   |                          |
|----------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/2<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 6 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 2/1<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | Y             | Arm 6 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 2/2<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | N             | Arm 5 Ahead   | Inf                | 100.0 %       | 2055              | 2055                     |
| 3/1<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 5 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/2<br>(Penny Emma Way)                | 3.00                     | 0.00     | N             | Arm 4 Right   | 15.00              | 100.0 %       | 1868              | 1868                     |
| 3/3<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 4 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 4/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 4: '2032 Bkg PM'** (FG4: '2032 Bkg PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
|        | A           | 0   | 406 | 601 | 1007 |
|        | B           | 311 | 0   | 366 | 677  |
|        | C           | 686 | 203 | 0   | 889  |
|        | Tot.        | 997 | 609 | 967 | 2573 |

| Lane                                          | Scenario 4:<br>2032 Bkg PM |
|-----------------------------------------------|----------------------------|
| <b>Junction: Low Moor Road/Penny Emma Way</b> |                            |
| 1/1<br>(with short)                           | 889(In)<br>686(Out)        |
| 1/2<br>(short)                                | 203                        |
| 2/1<br>(short)                                | 406                        |
| 2/2<br>(with short)                           | 1007(In)<br>601(Out)       |
| 3/1<br>(short)                                | 366                        |
| 3/2<br>(with short)                           | 517(In)<br>151(Out)        |
| 3/3                                           | 160                        |
| 4/1                                           | 837                        |
| 4/2                                           | 160                        |
| 5/1                                           | 967                        |
| 6/1                                           | 609                        |

### Lane Saturation Flows

| Junction: Low Moor Road/Penny Emma Way |                          |          |               |               |                    |               |                   |                          |
|----------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/2<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 6 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 2/1<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | Y             | Arm 6 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 2/2<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | N             | Arm 5 Ahead   | Inf                | 100.0 %       | 2055              | 2055                     |
| 3/1<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 5 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/2<br>(Penny Emma Way)                | 3.00                     | 0.00     | N             | Arm 4 Right   | 15.00              | 100.0 %       | 1868              | 1868                     |
| 3/3<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 4 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 4/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

## Full Input Data And Results

**Scenario 5: '2032 WD AM'** (FG5: '2032 WD AM', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

**Desired Flow :**

|        | Destination |     |     |     |      |
|--------|-------------|-----|-----|-----|------|
|        |             | A   | B   | C   | Tot. |
| Origin | A           | 0   | 347 | 541 | 888  |
|        | B           | 300 | 0   | 170 | 470  |
|        | C           | 661 | 348 | 0   | 1009 |
|        | Tot.        | 961 | 695 | 711 | 2367 |

### Traffic Lane Flows

| Lane                                          | Scenario 5:<br>2032 WD AM |
|-----------------------------------------------|---------------------------|
| <b>Junction: Low Moor Road/Penny Emma Way</b> |                           |
| 1/1<br>(with short)                           | 1009(In)<br>661(Out)      |
| 1/2<br>(short)                                | 348                       |
| 2/1<br>(short)                                | 347                       |
| 2/2<br>(with short)                           | 888(In)<br>541(Out)       |
| 3/1<br>(short)                                | 170                       |
| 3/2<br>(with short)                           | 310(In)<br>140(Out)       |
| 3/3                                           | 160                       |
| 4/1                                           | 801                       |
| 4/2                                           | 160                       |
| 5/1                                           | 711                       |
| 6/1                                           | 695                       |

**Lane Saturation Flows**

| Junction: Low Moor Road/Penny Emma Way |                          |          |               |               |                    |               |                   |                          |
|----------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/2<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 6 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 2/1<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | Y             | Arm 6 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 2/2<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | N             | Arm 5 Ahead   | Inf                | 100.0 %       | 2055              | 2055                     |
| 3/1<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 5 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/2<br>(Penny Emma Way)                | 3.00                     | 0.00     | N             | Arm 4 Right   | 15.00              | 100.0 %       | 1868              | 1868                     |
| 3/3<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 4 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 4/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 6: '2032 WD PM'** (FG6: '2032 WD PM', Plan 1: 'Network Control Plan 1')**Traffic Flows, Desired****Desired Flow :**

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        |             | A    | B   | C    | Tot. |
|        | A           | 0    | 406 | 630  | 1036 |
|        | B           | 311  | 0   | 379  | 690  |
|        | C           | 696  | 207 | 0    | 903  |
|        | Tot.        | 1007 | 613 | 1009 | 2629 |

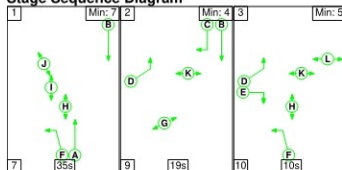
### Traffic Lane Flows

### Lane Saturation Flows

| Junction: Low Moor Road/Penny Emma Way |                          |          |               |               |                    |               |                   |                          |
|----------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                   | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 100.0 %       | 1915              | 1915                     |
| 1/2<br>(Low Moor Rd (N))               | 3.00                     | 0.00     | Y             | Arm 6 Right   | 12.00              | 100.0 %       | 1702              | 1702                     |
| 2/1<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | Y             | Arm 6 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 2/2<br>(Low Moor Rd (S))               | 3.00                     | 0.00     | N             | Arm 5 Ahead   | Inf                | 100.0 %       | 2055              | 2055                     |
| 3/1<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 5 Left    | 15.00              | 100.0 %       | 1741              | 1741                     |
| 3/2<br>(Penny Emma Way)                | 3.00                     | 0.00     | N             | Arm 4 Right   | 15.00              | 100.0 %       | 1868              | 1868                     |
| 3/3<br>(Penny Emma Way)                | 3.00                     | 0.00     | Y             | Arm 4 Right   | 15.00              | 100.0 %       | 1741              | 1741                     |
| 4/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 4/2                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1                                    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

Scenario 1: '2022 Observed AM' (FG1: '2022 Observed AM', Plan 1: 'Network Control Plan 1')

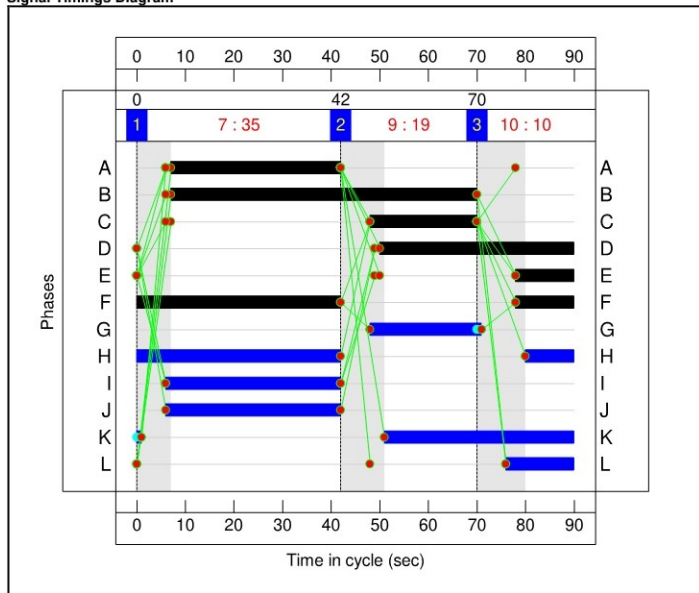
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 35 | 19 | 10 |
| Change Point | 0  | 42 | 70 |

## Signal Timings Diagram



## Full Input Data And Results

**Network Results**

| Item                                                    | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|---------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: Low Moor Road/Penny Emma Way T-Junction</b> | -                           | -         | <b>N/A</b>        | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>72.2%</b> |
| <b>Low Moor Road/Penny Emma Way</b>                     | -                           | -         | <b>N/A</b>        | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>72.2%</b> |
| 1/1+1/2                                                 | Low Moor Rd (N) Ahead Right | U         | N/A               | N/A                        | B C        |             | 1          | 63:22           | -               | 888               | 1915:1702         | 819+435        | 70.8 : 70.8% |
| 2/2+2/1                                                 | Low Moor Rd (S) Ahead Left  | U         | N/A               | N/A                        | A F        |             | 1          | 35:54           | -               | 806               | 2055:1741         | 680+445        | 71.7 : 71.7% |
| 3/2+3/1                                                 | Penny Emma Way Right Left   | U         | N/A               | N/A                        | E D        |             | 1          | 12:40           | -               | 270               | 1868:1741         | 161+213        | 72.2 : 72.2% |
| 3/3                                                     | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 12              | -               | 160               | 1741              | 251            | 63.6%        |
| 4/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 696               | Inf               | Inf            | 0.0%         |
| 4/2                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 160               | Inf               | Inf            | 0.0%         |
| 5/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 641               | Inf               | Inf            | 0.0%         |
| 6/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 627               | Inf               | Inf            | 0.0%         |

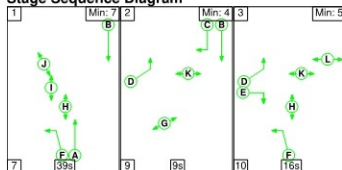
## Full Input Data And Results

| Item                                             | Arriving (pcu) | Leaving (pcu)                                           | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                           | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|--------------------------------------------------|----------------|---------------------------------------------------------|-----------------------|------------------------------|-----------------------------|---------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: Low Moor Road/Penny Emma Way T-Junction | -              | -                                                       | 0                     | 0                            | 0                           | 10.5                                                                            | 4.6                          | 0.0                                | 15.1                | -                         | -                                | -                          | -                    |
| Low Moor Road/Penny Emma Way                     | -              | -                                                       | 0                     | 0                            | 0                           | 10.5                                                                            | 4.6                          | 0.0                                | 15.1                | -                         | -                                | -                          | -                    |
| 1/1+1/2                                          | 888            | 888                                                     | -                     | -                            | -                           | 3.5                                                                             | 1.2                          | -                                  | 4.7                 | 19.0                      | 6.9                              | 1.2                        | 8.1                  |
| 2/2+2/1                                          | 806            | 806                                                     | -                     | -                            | -                           | 3.6                                                                             | 1.3                          | -                                  | 4.9                 | 21.7                      | 9.5                              | 1.3                        | 10.7                 |
| 3/2+3/1                                          | 270            | 270                                                     | -                     | -                            | -                           | 1.8                                                                             | 1.3                          | -                                  | 3.1                 | 41.4                      | 3.5                              | 1.3                        | 4.7                  |
| 3/3                                              | 160            | 160                                                     | -                     | -                            | -                           | 1.6                                                                             | 0.9                          | -                                  | 2.5                 | 55.6                      | 3.7                              | 0.9                        | 4.6                  |
| 4/1                                              | 696            | 696                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 4/2                                              | 160            | 160                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                              | 641            | 641                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                              | 627            | 627                                                     | -                     | -                            | -                           | 0.0                                                                             | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| C1                                               |                | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%): |                       |                              | 24.7<br>24.7                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes (pcuHr): |                              | 15.12<br>15.12                     | Cycle Time (s): 90  |                           |                                  |                            |                      |

# Full Input Data And Results

Scenario 2: '2022 Observed PM' (FG2: '2022 Observed PM', Plan 1: 'Network Control Plan 1')

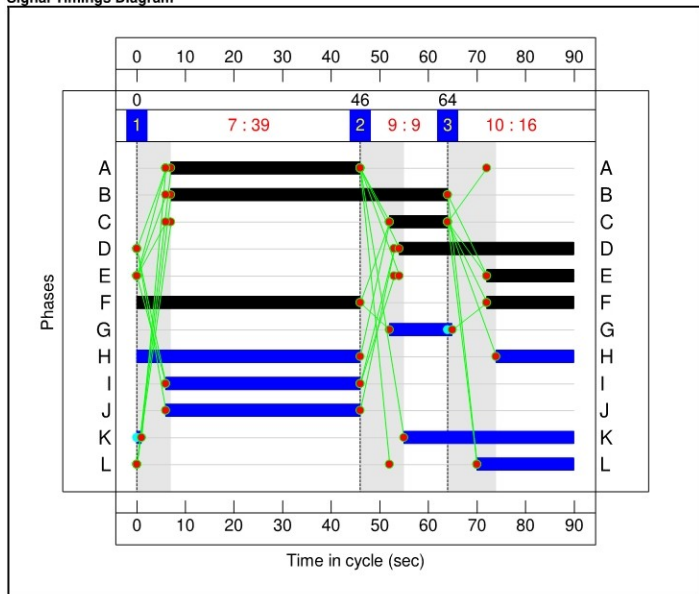
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 39 | 9  | 16 |
| Change Point | 0  | 46 | 64 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                                    | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|---------------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| <b>Network: Low Moor Road/Penny Emma Way T-Junction</b> | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>76.7%</b> |
| <b>Low Moor Road/Penny Emma Way</b>                     | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | <b>76.7%</b> |
| 1/1+1/2                                                 | Low Moor Rd (N) Ahead Right | U         | N/A               | N/A                        | B C        |             | 1          | 57:12           | -               | 818               | 1915:1702         | 1048+246       | 60.2 : 76.1% |
| 2/2+2/1                                                 | Low Moor Rd (S) Ahead Left  | U         | N/A               | N/A                        | A F        |             | 1          | 39:64           | -               | 927               | 2055:1741         | 728+492        | 76.0 : 76.0% |
| 3/2+3/1                                                 | Penny Emma Way Right Left   | U         | N/A               | N/A                        | E D        |             | 1          | 18:36           | -               | 463               | 1868:1741         | 164+439        | 76.7 : 76.7% |
| 3/3                                                     | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 18              | -               | 160               | 1741              | 368            | 43.5%        |
| 4/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 757               | Inf               | Inf            | 0.0%         |
| 4/2                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 160               | Inf               | Inf            | 0.0%         |
| 5/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 890               | Inf               | Inf            | 0.0%         |
| 6/1                                                     |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 561               | Inf               | Inf            | 0.0%         |

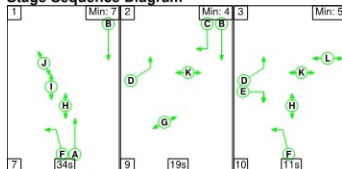
## Full Input Data And Results

| Item                                             | Arriving (pcu)                                          | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                                                          | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Average Delay Per PCU (s/pcu) | Max. Back of Queue (m) | Rand + Oversat Delay (sec) | Mean Max Queue Length (veh) |
|--------------------------------------------------|---------------------------------------------------------|---------------|-----------------------|------------------------------|-----------------------------|--------------------------------------------------------------------------------|------------------------------|------------------------------------|---------------------|-------------------------------|------------------------|----------------------------|-----------------------------|
| Network: Low Moor Road/Penny Emma Way T-Junction | -                                                       | -             | 0                     | 0                            | 0                           | 11.2                                                                           | 4.4                          | 0.0                                | 15.6                | -                             | -                      | -                          | -                           |
| Low Moor Road/Penny Emma Way                     | -                                                       | -             | 0                     | 0                            | 0                           | 11.2                                                                           | 4.4                          | 0.0                                | 15.6                | -                             | -                      | -                          | -                           |
| 1/1+1/2                                          | 818                                                     | 818           | -                     | -                            | -                           | 3.4                                                                            | 0.9                          | -                                  | 4.3                 | 18.8                          | 8.2                    | 0.9                        | 9.1                         |
| 2/2+2/1                                          | 927                                                     | 927           | -                     | -                            | -                           | 3.4                                                                            | 1.6                          | -                                  | 4.9                 | 19.2                          | 10.4                   | 1.6                        | 12.0                        |
| 3/2+3/1                                          | 463                                                     | 463           | -                     | -                            | -                           | 3.1                                                                            | 1.6                          | -                                  | 4.7                 | 36.3                          | 9.5                    | 1.6                        | 11.1                        |
| 3/3                                              | 160                                                     | 160           | -                     | -                            | -                           | 1.4                                                                            | 0.4                          | -                                  | 1.8                 | 39.5                          | 3.5                    | 0.4                        | 3.9                         |
| 4/1                                              | 757                                                     | 757           | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                           | 0.0                    | 0.0                        | 0.0                         |
| 4/2                                              | 160                                                     | 160           | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                           | 0.0                    | 0.0                        | 0.0                         |
| 5/1                                              | 890                                                     | 890           | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                           | 0.0                    | 0.0                        | 0.0                         |
| 6/1                                              | 561                                                     | 561           | -                     | -                            | -                           | 0.0                                                                            | 0.0                          | -                                  | 0.0                 | 0.0                           | 0.0                    | 0.0                        | 0.0                         |
| C1                                               | PRC for Signalled Lanes (%):<br>PRC Over All Lanes (%): |               |                       |                              | 17.4<br>17.4                | Total Delay for Signalled Lanes (pcuHr):<br>Total Delay Over All Lanes(pcuHr): |                              |                                    | 15.64<br>15.64      | Cycle Time (s):    90         |                        |                            |                             |

# Full Input Data And Results

Scenario 3: '2032 Bkg AM' (FG3: '2032 Bkg AM', Plan 1: 'Network Control Plan 1')

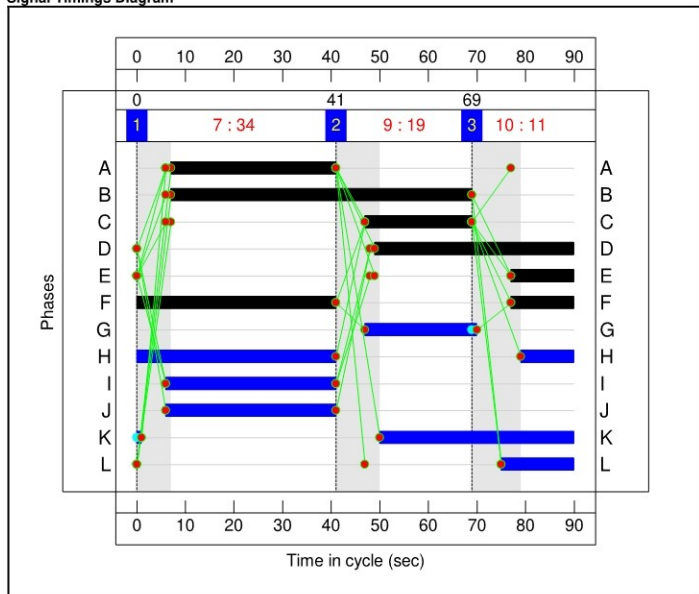
## Stage Sequence Diagram



## Stage Timings

| Stage        | 1  | 2  | 3  |
|--------------|----|----|----|
| Duration     | 34 | 19 | 11 |
| Change Point | 0  | 41 | 69 |

## Signal Timings Diagram



## Full Input Data And Results

## Network Results

| Item                                             | Lane Description            | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%)  |
|--------------------------------------------------|-----------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| Network: Low Moor Road/Penny Emma Way T-Junction | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 80.2%        |
| Low Moor Road/Penny Emma Way                     | -                           | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 80.2%        |
| 1/1+1/2                                          | Low Moor Rd (N) Ahead Right | U         | N/A               | N/A                        | B C        |             | 1          | 62:22           | -               | 965               | 1915:1702         | 818+435        | 77.0 : 77.0% |
| 2/2+2/1                                          | Low Moor Rd (S) Ahead Left  | U         | N/A               | N/A                        | A F        |             | 1          | 34:54           | -               | 876               | 2055:1741         | 667+437        | 79.4 : 79.4% |
| 3/2+3/1                                          | Penny Emma Way Right Left   | U         | N/A               | N/A                        | E D        |             | 1          | 13:41           | -               | 307               | 1868:1741         | 175+208        | 80.2 : 80.2% |
| 3/3                                              | Penny Emma Way Right        | U         | N/A               | N/A                        | E          |             | 1          | 13              | -               | 160               | 1741              | 271            | 59.1%        |
| 4/1                                              |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 770               | Inf               | Inf            | 0.0%         |
| 4/2                                              |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 160               | Inf               | Inf            | 0.0%         |
| 5/1                                              |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 696               | Inf               | Inf            | 0.0%         |
| 6/1                                              |                             | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 682               | Inf               | Inf            | 0.0%         |